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Textile World

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An Individual Mill's "New Uses" Campaign

ALTHOUGH there are all sorts of ways to analyze the job which the textile industry has to do, and is doing, the following "breakdown" is probably comprehensive enough, and yet simple enough, for ordinary purposes: (1) To set its house in order, so that it is producing in line with current demand; (2) to have the courage to demand a fair price for its product, manufactured on this orderly basis; (3) to extend the market for its products, so that it may make a fair profit on a larger number of units.

Marked progress is being made on item (1). With regard to item (2), a new attitude is gaining ground; we confidently believe buyers will find the 1931 textile manufacturer a different man to deal with.

On item (3), very important fundamental work has been done. The various branches of the industry, through their cooperative organizations, have analyzed the potential markets and have pointed the way toward opportunities for extension of existing uses, and adoption of new uses.

Such work will be largely ineffectual if it is not "followed through" by individual manufacturers. Each mill has a market analysis job and a sales promotion job of its own.

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This job will differ widely among the various plants. Broadly, however, it calls for an approach along strictly economic lines, and on the basis of a broad-gauged view of the future.

To many manufacturers, the most effective line of attack will be through the extension of its activities to include further fabrication of its products. The textile mill of the future will be directly concerned with the production of certain types of clothing, floor covering, and other items of advanced manufacture.

This is not a new thought—either with us or with others. In 1926, we stated in these columns that "future textile development will tend more and more toward the production of completely manufactured articles." We used as an example, the Callaway Mills diversification at La Grange, Ga., where products of primary manufacture are being advanced to men's clothing, rugs, canvas baskets and trucks, laundry nets, etc. Other instances have developed. One is the program of the Kendall Co., which not only produces cloth but fabricates it into various types of surgical supplies. In both the Callaway and Kendall cases, distribution of the final products, under trade names, is included. Other examples could be cited.

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This type of extended activity enables mills to participate *themselves,* in the development of uses for primary textile products; it implants the sales attitude in the industry; it eliminates certain intermediate profits; it carries a mill's name directly into consumer markets.

These positive advantages outweigh all the obvious negative arguments which can be, and have been, marshaled against such a procedure.

We do not believe, for a moment, that all textile mills can successfully undertake this sort of program. Type of product, size, financial standing, personnel, are controlling—and often inhibiting—factors. We do believe, however, that a very large number of mills will do well to contemplate the future in terms of this type of textile expansion.

We also know that those who act first will profit first—and will have a sound merchandising policy established by the time others are just becoming aware of the possibilities.

The Week in Textiles

Walker D. Hines on the Air . . .

WHAT COTTON means to American agriculture and industry and its unique service to millions of persons who wear or use it in some form will be described by Walker D. Hines, chairman of the board of The Cotton-Textile Institute in a radio address Saturday evening, Dec. 6 over the Columbia Broadcasting System. The problem of night work and its discouragement through the elimination of night employment of women and minors will also be discussed. . . . . Mr. Hines' address will be one of the educational features broadcast each week on the "Romance of American Industries." He will speak from 7:15 to 7:30 p.m., Eastern Standard Time, from station WABC in New York and 26 other stations in the Columbia network.

British Rayon Notes . . .

BRITISH RAYON production for October was 4,560,000 lb. against 4,210,000 in September. The amount excised for sale in October exceeded production by 200,000 lb. . . . . Courtaulds have further reduced viscose rayon prices and high quality 150 denier, 36 filament is now listed at 4s. 3d. In the British rayon field the percentage of insured workers unemployed is now 28% against 20.6% in July.

British Cotton Wages Dispute . . .

THE COTTON weavers' union in Lancashire, England, on Dec. 2 definitely rejected employers' proposed new wage list which allowed more looms per weaver. It is expected that employers will post notices putting the new list into operation, leaving operatives to provide counter proposals.

Wool Machinery More Active . . .

WOOL MACHINERY, with exception of combs and woolen spindles, was more active in October than the previous month, according to Department of Commerce. Looms wider than 50 in., were 46.8% active as compared with 45.5% in September; looms 50 in., or less, were 43.7% as compared with 41.4% the previous month; worsted spindles were 2% more active in October than in September; carpet and rug looms were 1.5% more active. . . . . Indicates that small stocks of merchandise are slowly raising the rate of machinery operations as replacements become necessary.

The Business Outlook

BEGINNING of December shows no significant change in the stagnant business situation, and few indications that any change is in early prospect. The level at which business activity is running shows no sign of going much lower, probably can't, and probably won't, unless something has happened to the world that statistical yardsticks never had to measure before. Our index still fluctuates around a level 80% below normal, dropping slightly from 80.8% (revised) to 80.3% (preliminary) for the week ending Nov. 29. Industrial activity is still sloping down, as usual, to the year end, but from a low level. General trade, reflected in merchandise carloadings and currency in circulation, is pointed up toward the holiday peak.—*The Business Week.*

The Textile Outlook

IN SOME branches of the textile industry distributors' low inventories are compelling a current of small orders through the year-end period which is normally inactive. This is particularly true in cottons and many houses expect to record the best December in several years, particularly if raw cotton holds steady. Prices are in general steady with greatest firmness in goods which were recently the most active. . . . Wool goods sellers are not expecting so good a month. They have transferred their attention to the spring season and developments in this connection are unlikely until after the turn of the year. Men's wear buyers are more cautious than women's wear. Knit goods markets are irregular with bright and dull spots. Curtailment in full-fashioned hosiery production is one encouraging sign. . . . Raw silk has passed two weeks of steadiness and importers are more hopeful than for some time. Yarns are holding their own and broadsilks, though dull, believe spring demand will help them after the New Year.

Insurance vs. Textiles . . .

INSURANCE is said to be a new competitor of cotton textiles in an important field. A weird pair of opponents—insurance versus textiles! Nevertheless both are seeking business from operators of miniature golf courses—textiles to shield the courses against rain, tent-like enclosures making them playable in any kind of weather; and rain insurance to protect the proprietors against loss on their big money-making days, Sundays and holidays.

Hosiery Overproduction . . .

OVERCONFIDENCE among hosiery manufacturers, especially producers of women's silk full-fashioned goods, regarding spring prospects, which has inspired mills to continue producing far in excess of current demand, is causing serious concern to the leaders in that industry. . . . . John Wyckoff Mettler, president of the National Association of Hosiery and Underwear Manufacturers, and a foremost manufacturer as president of the Interwoven Mills, Inc., has issued a statement to the knitters strongly urging immediate curtailment of output. . . . . One way of solving the problem is to shut down mills, and this step has been taken by the Gotham Silk Hosiery Co., which announces that it will close its Pennsylvania and New Jersey plants for 30 days starting Dec. 6. . . . . Hosiery manufac-

turers continue strongly individualistic in viewpoint and the trade, while approving of both Mr. Mettler's statement and the Gotham action, is skeptical about the chance of general curtailment.

Silence in London . . .

A CABLE SENT by TEXTILE WORLD on Thursday, Dec. 4, to its British rayon correspondent, asking for news on the reported rayon conference to be held in London, brought the following reply: "Courtaulds observes complete silence on subject of London rayon conference. London *Financial Times* today states a conference is to be held in the near future but gives no details. No other news yet except New York press stories, but developments awaited."

Favors Night Work Elimination . . .

IN ADDITION to the comment published in these columns last week, on Eben E. Whitman's proposal for the elimination of night employment of women and minors in woolen and worsted mills, the following statement has been received from Harry Lonsdale, treasurer, F. A. Bochmann & Co., Inc., Philadelphia: "Night work should be eliminated in all States of the union. It is one sure way of correcting over-production in our industry."

Mills Fight Local Taxes . . .

EMPHASIZING NEED for economy in county and municipal government, the Cotton Manufacturers Association of South Carolina, published full-page advertisements in daily newspapers of the Palmetto State this week, in which cold figures dramatized the enormous increase in local taxes. . . . . One group of mills in a South Carolina county reported that its taxes in 1919 amounted to $19,754 as compared with payments in 1929 totaling $91,867, an increase of 14c. to 55c. per spindle in the ten-year period. . . . . Taxes paid by this group of mills were subdivided as follows: capital stock tax amounted to 6% of total, State tax to 8% of total; and county and school district taxes together amounted to 83% of total.

1930 Cotton Better in Grade . . .

COTTON OF THE present crop, ginned prior to Nov. 1, 1930, was slightly better in grade and different in staple from ginnings of corresponding period last year. . . . . A report of the Bureau of Agricultural Economics of the Department of Agriculture shows 14.2% was shorter than $\frac{7}{8}$ in., compared with 20.4% ginned during same period last year. Figures indicate that 85.3% was tenderable compared with 78.8% in cotton ginned up to same time last year. . . . . Encouraging in view of complaints about deterioration in previous crop.

Hosiery Conference Proposed . . .

SECRETARY OF COMMERCE LAMONT will be asked to preside at a general conference of the hosiery industry, if plans made public by Joseph Haines, Jr., executive secretary of the Full-Fashioned Hosiery Manufacturers of America, prove fruitful. . . . . In an open letter to members of that organization, Mr. Haines states that a group of manufacturers, not members of the association, are working to arrange such a meeting with Mr. Lamont in the hope that it might bring about "a greater degree of understanding and collaboration among the several interests in the industry." He intimates that labor conditions, wage scale and the production situation would be among subjects considered at the proposed meeting between the manufacturers and the Secretary of Commerce.

More Wool Consumed . . .

WE CONSUMED almost 3,000,000 lb. more wool in October than in September, according to data prepared by the Department of Commerce. In October, 40,974,783 lb. grease equivalent, went into manufacture, as compared with 38,082,737 lb. in September. The rate is still much under same months last year, 59,351,974 lb., being used October, 1929. . . . . Of the total wool used in manufacture in October 63.6% was domestic and 36.4% was foreign wool. As consumption has declined we have turned more to use of domestic, cutting down imports.

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Textile Program Makes Refreshing Reading

Says P. H. Gadsden

"It is not surprising that other industries are watching and applauding the progress of the rejuvenated textile industry," states P. H. Gadsden, vice-president, United Gas Improvement Co., and president, Philadelphia Chamber of Commerce. "The textile industry's modernization program is refreshing reading. So are recent newspaper accounts of textile activities. The pioneer seems to be pioneering again—in manufacturing and in merchandising."

STAGING THE FIGHT AGAINST

Seventh Article in Series

Obsolescence Exerts Powerful Influence in Full-Fashioned Hosiery Manufacture

An Interview by Warren C. Steele with

G. C. Aberle
General Manager, H. C. Aberle Co.

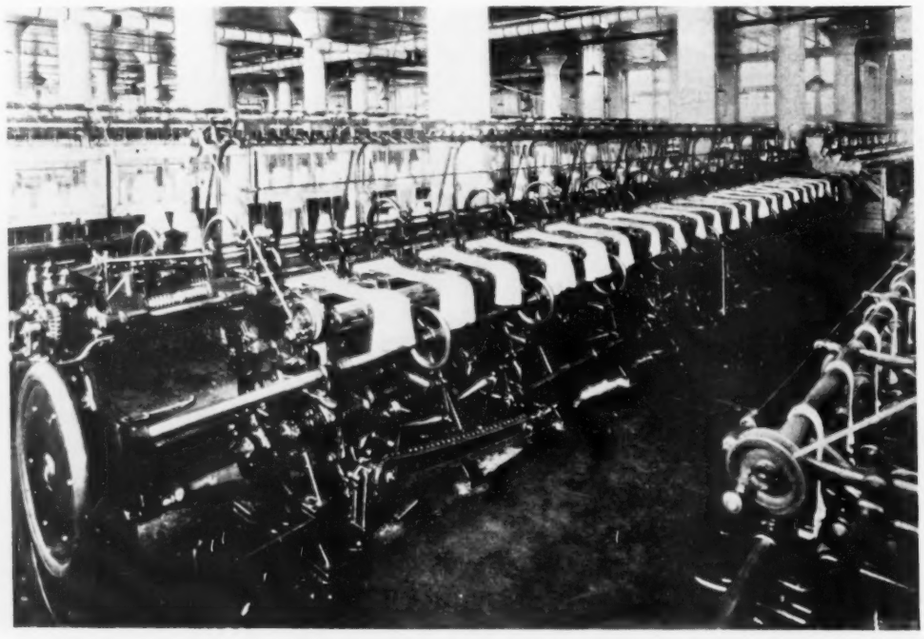
THE automotive industry usually comes first to mind when one thinks of rapid obsolescence of productive machinery. Changes in this field have made it imperative for manufacturers who wish to keep up with the procession to scrap machines which in most other industries would still be considered good for many more years of service.

The closest approach to this situation in the textile field is to be found in the manufacture of full-fashioned hosiery, according to G. C. Aberle, general manager, H. C. Aberle Co., Philadelphia. Both the manufacture of automobiles and the production of full-fashioned hosiery are relatively new volume businesses for the United States, and this is probably the most important reason for frequent and rapid changes in products that necessitate new machinery.

"Not many years ago automobiles were considered a luxury and in most instances simply a plaything for people with more than an average share of world's goods," said Mr. Aberle. "This applies almost in the same degree to full-fashioned hosiery. Years ago this type of hosiery was regarded as a luxury; to see a pair worn on the streets meant that the wearer also probably owned an automobile.

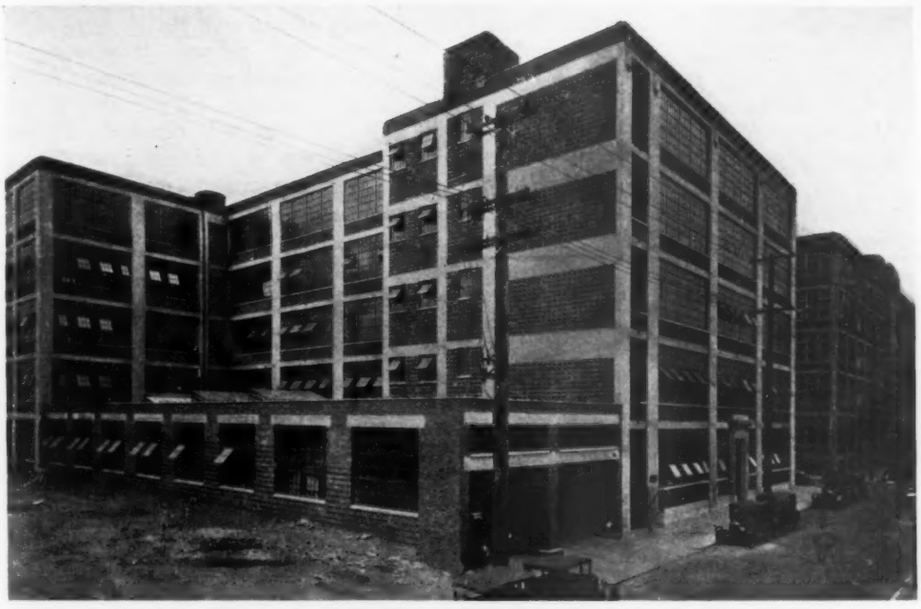
"The last two decades have changed this beyond the widest stretches of the imagination of manufacturers of both articles. Their products are now regarded as necessities in the majority of American households. With this change in classification, full-fashioned goods became a volume business instead of a sideline.

"This revolution in consumption and, of necessity, in production brought problems in rapid succession before machinery builders. Volume business and keener competition, as always, resulted in the development of newer and more efficient types of machines. This stage of development of the business can be compared with automobile manufacture—the changing of models each year and the perfection of more efficient engines, etc.



When these full-fashioned hosiery machines in the Aberle plant become obsolete, they will be scrapped to prevent their increasing competition

WEAR AND OBSOLESCENCE



Plant of H. C. Aberle Co., where effect of changing styles on machinery requirements is carefully watched

"This evolution shortened the life of full-fashioned machinery if the individual manufacturer desired to keep up with the times. It is impossible for the manufacturer today to use machinery that he used to produce the type of full-fashioned in demand five years ago; that is, unless he has had the machine practically re-built."

Depreciation Funds

There is a wide difference of opinion among manufacturers as to what should be considered the average life of a full-fashioned machine. Practically every manufacturer, Mr. Aberle believes, has a depreciation fund as protection against the rapidity with which old machines become practically useless for making the goods demanded by the constantly changing taste of the public.

"Due to the relative newness of the business, there are many points in the matter of depreciation of machinery that manufacturers have not carefully studied," said Mr. Aberle. "Without doubt, the older concerns which have gone through most of the period of change are the ones that have made a more thorough study of the whole question of wear and obsolescence depreciation charges in their accounting departments.

"But even among these there is a wide difference of opinion as to what percentage of the cost of various types of full-fashioned machines should be set aside annually so that, when it is necessary to purchase a new machine, this fund will contain almost if not quite the amount necessary for the purchase of the new model.

"It has been found by manufacturers and machinery builders that it does not pay to re-build coarse-gauged machines for finer-gauged production. Practically all agree that it is more economical in the long run to buy a new machine rather than pay out a lot of money for rebuilding one which, when completed, will not be able to compete on an efficiency basis with the latest models.

"Full-fashioned manufacturers set aside annually anywhere from 5 to 20% for depreciation funds, and reports from various manufacturers indicate that the Government has allowed them to figure depreciation within these limits."

Mr. Aberle pointed out that the individual policy of the manufacturer has much to do with the amount that should be set aside for depreciation or obsolescence. If the concern means at all costs to keep abreast with frequent changes in machines for making types of hosiery in most active demand, its rate would be much higher than a concern that prefers to follow lines than can be made on its old machines.

"In probably no other industry using machinery for purely manufacturing purposes does the machinery become obsolete long before it is worn out more than in the full-fashioned hosiery trade," he said. "Full-fashioned machines that are knitting just as efficiently as they did fifteen years ago have been scrapped."

Obsolescence Overshadows Wear

Because of this, the amount which manufacturers of full-fashioned goods should charge off should be large enough to take care of both wear and obsolescence. In fact, the manufacturer of full-fashioned lines should regard the item more in the light of obsolescence than of wear, according to Mr. Aberle.

"The fund to be set aside for depreciation is deducted from the taxable income by the manufacturer. If obsolescence does occur and replacement is made before the total cost of the equipment has been charged off on the books, then mills can deduct the undischarged amount, less scrap value, from taxable income for that year in which the replacement is made, this being in line with decisions that have been made by the Internal Revenue Department.

"Repair records of each machine are kept by the average manufacturer, but these are not so elaborate as are found in other sections of the textile industry. They do not compare with the detailed records, for example, that a concern would keep regarding the cost of operating its fleet of motor trucks or even with rec-

ords that a weaving mill would keep regarding its looms.

"A number of the larger firms have found that many of the detailed records that were at first kept, proved more expensive than the benefits obtained from them. Great masses of information formerly kept of various machines were found to be practically valueless in this particular line of manufacture.

"Repairs to full-fashioned machines are a minor item in most cases. The machine itself does not break, but the expense in connection with replacement of knitting needles, sinkers, dividers, etc., is the important item.

When Machine Must Pay for Itself

"The more important manufacturers of staple lines of full-fashioned, in view of the conditions they have faced during recent years, have come to the point where they now figure the time in which a machine must pay for itself at from five to ten years, depending upon the machine, type of goods manufactured, and changes in style demands during the previous few years.

"Not many years ago the standard gauge for full-fashioned machines was 39. This has advanced toward fineness so that now 42 gauge is the standard; and the trend continues in that direction, 57 gauge being used by several manufacturers.

"Where a concern has been engaged mainly in the manufacture of specialty lines of hosiery in which style changes have been more marked than in the more staple goods, they have found that their machines have become obsolete more rapidly than those owned by manufacturers who have been turning out more staple hosiery. Such manufacturers have charged off a larger percentage for obsolescence or depreciation, and 15 to 20% in numerous instances has been the rule."

According to Mr. Aberle, the most important consideration is marketability of product. "It goes without saying," he stated, "that in buying new equipment it is not alone essential that manufacturers feel their old equipment will not do the work. They should also consider whether or not the new machines will permit them to turn out a better product at a lower cost.

Who Suggests Replacements

"In our case the first in our organization to make recommendations or suggestions for changes in equipment are members of our sales organization. Salesmen are in close touch with market conditions and know exactly what our customers are demanding. They naturally are the first to learn of a distinct change in demand. If this requires that we purchase new machinery in order to satisfy this demand, then the management naturally studies the question carefully and makes a decision.

"Frequently suggestions that have originated with our sales department not only prove of material benefit in deciding when to buy new equipment, but they often prove of value to builders of full-fashioned machines, quickly acquainting them with new developments. Our company considers it of prime importance to co-operate with machinery builders, and many beneficial suggestions have mutually been made through this policy."

When I asked Mr. Aberle what his firm did with their old machinery or machines that were replaced with newer models, the reply was quickly forthcoming. "They are scrapped," he said. "We feel that is the soundest practice. When you sell old machines to someone else it only means that you thereby increase your competition of an extremely undesirable sort. You gain by scrapping it, without doubt."

Mr. Aberle did not go further than this and recommend that all full-fashioned manufacturers do the same, but confined his remarks to what his concern did. He said they had been scrapping old machines for some years and had never regretted this policy. He felt they were doing themselves a service when they scrapped instead of sold to a party who in all likelihood would eventually prove to be just the sort of a competitor they did not want to assist in getting started in business.

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Textile Foundation Allocates Funds for Research

AT a meeting of the directors of the Textile Foundation in Washington, D. C., Thursday of this week, specific grants of funds out of the Foundation's income were authorized to certain organizations for the conduct of research.

It was decided to allocate a sum of money to the United States Institute for Textile Research, for the purpose of assembling data concerning existing research organizations and the work they are doing. It is felt that this survey will result in the avoidance of duplication of effort.

Another sum was allocated to the American Association of Textile Chemists and Colorists to undertake work on color fastness in textiles. The specific nature of this work will be determined after the association consults with Henry B. Thompson, one of the directors of the Foundation.

The directors also voted money to the Smithsonian Institution for the preparation of a glossary of textile fabrics.

The directors were impressed with the advisability of undertaking some study in the marketing of textiles and with that end in view authorized a preliminary survey intended to bring out what has already been done and the scope that a comprehensive survey should take.

Stuart W. Cramer was authorized to discuss this project with the National Industrial Conference Board.

In attendance at the meeting were Franklin W. Hobbs, chairman; Stuart W. Cramer, treasurer; Henry B. Thompson; Secretary of Commerce Lamont, and E. T. Pickard, secretary. Secretary of Agriculture Hyde did not attend.

Rayon Trade Watchfully Waiting, As Chiefs Gather for London Conference

At the risk of boring others, and even ourselves, we have emphasized again and again in these columns, the need for intelligent merchandising action in the rayon industry which would capitalize the fiber's chief asset: its controllability, and consequently its potential stability. We are hopeful that the reported London conference may be the forerunner of such intelligent action.—*Editor*

RAYON yarn sales slid further down the scale this week, due partly to such obvious elements as December lull, inventory-taking and depression, and partly to the departure of the heads of some of the principal companies for what is understood to be a trade conference in London. The departure of the rayon executives was easily the most important event of the week in the industry, and the overseas conference promises to be fraught with far-reaching significance.

Out of the smoke of rumor and speculation in this regard, certain facts stand forth. The executives who will be in London will represent, by a big margin, the lion's share of rayon production in this country. They will have, immediately available, the advice and instruction of the heads of such of the parent companies as are located abroad.

The interpretation placed upon such a gathering in London by both distributors and producers and consumers of rayon in this country, can be summarized as follows: The rayon industry in this country has gone through an uncomfortable year. Price cut has followed price cut in rapid succession, and the latest development, a general 60-day price guarantee, has not had the desired effect of restoring confidence among yarn buyers.

It is recognized that price stability has given way to uncertainty, creating a feeling of distrust among manufacturers so pronounced that, in at least a few instances, these manufacturers are disposed to turn to silk yarn instead, preferring the possibly higher cost to the danger of loss involved in the use of a fiber of greatly vacillating price.

The rayon producers are understood to have seen the problem in its true focus and to be ready to consider it in the light of the industry as a whole, rather than from the viewpoint of individual companies.

Results of Conference Speculative

What will develop at the London conference is speculative. What should be done, and what the chief producers and consumers here hope will be done, is that the conference will substitute a policy of intelligent and lawful cooperation for the present policy of cut-throat antagonism. The New York market regards the conference as full of promise for the rayon industry. Executives who are in a position to speak authoritatively say that the heads of the companies have gone to London with an open mind, eager for the shaping of some constructive policy which would eliminate the present uncertainty and enable manufacturers to buy stocks of rayon for some time ahead with reasonable assurance that prices will remain steady.

At present writing—and this despite the 60-day guarantee which was aimed to eliminate just such rumors—there is talk of a January price reduction. The hope of the producers is, first, that there will be no drastic cut; second, that there will be no cut at all; and, third, that the industry will set out intelligently to win back the consumer confidence which it has lost through the recent hectic competition. It is emphasized that rayon is not utilizing its inherent advantage as a man-made fiber, namely, absolute control of its own market, both in production and sales.

The London conference was apparently an impromptu development, but it is the result of market forces that for months have been pushing in that direction. It may mean that the producers are becoming industry-conscious rather than company-conscious. So far as price-cutting is concerned, it is futile to blame one group or another. The industry now is beginning to acknowledge that all companies must bear at least some responsibility for the present instability, and here lies the chief basis for hope that something constructive will develop from the conference abroad.

One thing is paramount, and the meeting in London would imply that the producers have recognized it; that is this: There must be an immediate turnabout in producing and merchandising policy, if the industry is not going to usher in the new year with a new price-cutting contest which would further alienate the most important elements of the consuming groups.

POWER SHOW *Discloses*

MANY new developments in power and engineering equipment of interest to textile men were displayed in the hundreds of ingeniously arranged exhibits at the Ninth National Exposition of Power and Mechanical Engineering, held this week at Grand Central Palace, New York. Some of the new or improved features of this equipment initially introduced to the trade in 1930 are described on this and following pages.

Steam Generation

New steam-generation equipment included stokers, pulverizers, economizers, preheaters, ash removers, heat exchangers, gas and oil burners, superheaters, and refractories.

New Hydroseal ash pump, Hydrovactor, and wind-swept valve were featured by the Allen-Sherman-Hoff Co. The Hydroseal ash pump is used in connection with the Hydrojet system of ash removal, while the Hydrovactor and the wind-swept valve are the principal units of the Hydrovac system of soot and dust removal. The American Blower Corp. showed the new No. 9, Sirocco induced-draft fan, having a maximum capacity of 96,500 cu.ft. per min. and operating at 695 r.p.m. One of the outstanding exhibits was that of the American Engineering Co. This consisted of two retorts of the Taylor multiple-retort, underfeed stoker, similar to those installed at the plant of Detroit Edison Co. With the exception of the crusher-rolls, the entire stoker was in operation and was controlled in the same manner as if installed in the central station of some plant.

Samples of materials showing the results obtained by a new welding technique were featured by the Babcock & Wilcox Co. This technique was developed especially for the welding of boiler drums and is designed to give welds which are stronger than the adjacent metal. In the same booth Fuller-Lehigh Co. displayed the grinding elements of two new types of coal pulverizers—one of large capacity, and the other of small. In these pulverizers the grinding of the coal is performed under pressure applied by a spring. Improved devices shown by Builders Iron Foundry were a venturi tube designed for high pressures and constructed without flanges, and a shunt meter with direct-reading scale. Combustion Engineering Corp. featured sectional headers for 1,400-lb. pressure, a section of the return-bend economizer, and models of the C-E air preheater and stoker unit for small boilers. The model of the stoker unit showed the agitator grates, dump grates, and automatic ash ejectors.

Three new devices shown by Ellison Draft Gauge Co. were a 34-pointer draft gage for the new forced-draft Taylor stoker with venturi nozzle, a pointer draft gage with straight-line movement and tilted scales for high mounting, and a check-seal for sealing draft gages so as to prevent drawing out of the oil under draft in excess of the scale range without increasing the height of the gage. Foster Wheeler Corp. displayed full-sized, cut-away sections of a new clay-pipe air heater, and a round-tube alloy-steel radiant superheater, and models of new pulverized-coal equipment, economizers, and heat exchangers. A recent development featured by Griscom-Russell Co. was the Equaflo heat-exchanger, in which all cross baffles in the shells are eliminated, and the tubes are swaged down at one end to permit closer spacing in the shell, while retaining sufficient bridge wall in the tube sheets for strength. The G-Weld, also shown by this company, is claimed to give strength greater than that of adjacent matter on all types of pressure vessels.

In the booth of the Keasbey & Mattison Co. was displayed a piece of Ambler high-temperature covering taken from the superheater steam line at the Deepwater Power Plant, showing no deterioration after about 5,000 consecutive hours. In its automatic stoker, represented by a full-sized operating model, the Neemes Foundry Co. showed new compact damper control, gear-reduction, and motor unit; simplified cold-feed adjustment; and an improvement in the manner of breaking up the coke bed. This company also featured a recently devised type of dumping and shaking mechanism, which reduces the space occupied on the boiler front. Through the use of models, Oakite Products, Inc., showed a new method for cleaning condenser tubes, without dismantling, by circulating an Oakite solution with gravity-feed and steam-line heating, saving time and labor. Also by means of models this concern demonstrated a new portable tank for cleaning coolers in oil-burning power plants with an Oakite solution.

A feature of the exhibit of Prat-Daniel Corp. was the Thermix Type-II stack, recommended for excessively high-temperature gases, or acid-laden gases. This is a so-called, out-of-circuit stack which uses an air fan to induce the draft over the furnace or over the vessel containing the acid. A combination Ray gas-oil burner was shown by Preferred Utilities Co., Inc. This unit is a premix burner, with gas and primary air intake on the suction side of the blower fan. An improved Atrita unit pulverizer, in which both the fan and pulverizing chamber are included in a common base and cover, was exhibited by Riley Stoker Corp. This company also showed a newly designed burner, known as the Riley Cyclone Burner, and a Jones side-dump stoker, equipped with moving combustion grates and otherwise improved in design.

The Viking model, six-cylinder, 425-hp. stationary engine was displayed by Sterling Engine Co. This engine and its counterpart, the eight-cylinder, 565-hp. engine, are said to be the largest bored, 1200-revolution, high-duty, gas or gasoline engines manufactured. This company also showed the Dolphin six-cylinder engine, which has a rating of 180 hp. at 1200 r.p.m., and 225 hp. at 1550 r.p.m. A model, $\frac{1}{8}$ actual size, of a 1400-lb. semi-vertical boiler with Elesco superheaters, now being installed at the Fordson Plant, Ford Motor Co., was exhibited by the Superheater Co. These superheaters are designed to handle 700,000 lb. of steam per hour at 1350-lb. pressure, raising the temperature from 168° F. to a final temperature of 750° F.

The Swartwout Co. featured the carburetor type of desuperheater. This unit, when used in conjunction with a Swartwout desuperheater governor, makes possible a complete pressure- and temperature-reducing station, and safeguards against failure of the water supply. By means of a model the Westinghouse Electric & Mfg. Co. demonstrated an improvement in its link-grate stoker for certain coals and conditions. This innovation consists of the use of two thin tuyeres in place of one, thus affording relatively twice the cooling surface, permitting more thorough air admission, and reducing clinkering. This company illustrated by a motion-picture film a new ash-sluicing system which, by manual or automatic operation, transports and elevates the ash without the use of ash-handling pumps.

Savall rock-wool pipe insulation, which is a natural rock wool without artificial binders, and which is stated to afford efficient pipe insulation for temperatures up to 1250° F., was featured by General Insulating & Mfg. Co. Harbison-

Panorama of New Developments

Walker Refractories Co. exhibited specimens of first and second quality fire-clay brick produced in various manufacturing centers, and also high-alumina brick for power-plant boiler settings.

Various types of granular refractories, plastic fire-brick, and Keystone sprayer for the mechanical application of refractories to furnace walls and fire-brick cement, were shown by Keystone Refractories Co. One recent development displayed by the S. Obermayer Co. was a new-type container for unshaped, plastic, fire brick. This container is a rectangular, waterproof carton designed to keep the material in good condition, to provide easy storage, and to prevent waste of the plastic. There was also a demonstration of the new method and equipment used by this company for the mechanical installation of unshaped, plastic fire brick.

Pipes and Fittings

In steam-line equipment were exhibited new traps, valves, joints, gaskets, pipe tools, welded pipe, and other devices.

A glass working model of its latest type of steam trap was shown by Armstrong Steam Trap Co. Three types of reverse-current valves for use in connection with bleeder turbines, solenoid valves, adjustable combination regulators, condensate drainers, and other accessories were displayed by Atwood & Morrill Co. A feature of this exhibit was a single-seat, spring-loader relief valve with large capacity to relieve all pressures from 25 to 2,000 lb., in sizes up to and including 10 in. E. B. Badger & Sons Co. showed a new type of joint for small pipe lines. Equipoise rotary shaft valves, particularly adapted for high pressures or high velocities, were featured by H. Belfield Co. On standard pressure insulations it is stated that use of this type of valve gives a longer life to the interior parts, due to the reduction of friction caused by the thrust which acts upon the disk. Among its line of pipe tools, the Borden Co. showed the new Beaver three-way die stock.

The Curtis pilot control-tank valve, said to be accurate to 1-in. level and free from water hammer, and the packless Curtis excess pump regulator, were demonstrated by Julian d'Este Co. The pump regulator is designed to control reciprocating or turbine-driven steam pumps to maintain a constant, fixed excess pressure above the boiler pressure in the feed line. Features of the Everlasting Valve Co. exhibit were a special Everlasting valve and a companion-angle valve, both for use with pressures up to 500 lb. Buttonhole tape and asbestos tape, for application of flanges to large tanks and similar purposes, were shown by the Garlock Packing Co. Precision oil-seals were featured by Gits Bros. Mfg. Co.

A new, heavy-duty, high-speed, pipe-threading machine was displayed by Jarecki Mfg. Co. This machine is equipped with an automatic, self-opening die head and with Timken bearings.

Automatic suction-control valves for use when one pump is connected to several sumps or pits, were exhibited by the LaBour Co., Inc. By using a valve at each suction opening, automatic drainage can be accomplished, each valve operating independently of any difference in level between valves.

New developments shown by Leslie Co. were a pump regulator and a new type of reducing valve of both steel and bronze construction. The new Lee multi-stage valve was displayed by the Multivalve Corp. Northern Equipment Co. exhibited the Copes system of boiler-feed control. This company showed also the Copes Type R-G valve, which combines in a single-contact body, a flow-control valve, and an excess-pressure-control valve. It also exhibited a pump governor and a valve for high-pressure, condensate-drainage control. An improved line of steam traps, heating specialties, strainers, and temperature regulators was shown by Sarco Co., Inc. A refinement of design made during the year is the use of stainless steel for all valve parts on traps intended for pressures above 30 lb. Among the new products displayed by the Youngstown Sheet & Tube Co. was electric-welded pipe. This company also had on exhibition a working model of a tube-mill furnace producing butt-weld pipe.

A view of some of the exhibits at the Ninth National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York

Electrical Equipment

New electrical equipment included switches, circuit breakers, relays, contactors, motors, and lamps.

Included among the new devices shown by Allen-Bradley Co., were a hand-operated a.c. switch with overload breaker, a pressure switch, and a float switch. In its exhibit of solenoid-operated valves, automatic-transfer and remote-control switches, relays, and contactors, the Automatic Switch Co. stressed especially two new automatic transfer switches for remote control. A feature of these switches is that no neutral position is possible and connection to the load from either predominating or emergency circuit is thus maintained under all conditions. Special features of the Century Electric Co. exhibit included a totally enclosed, fan-cooled motor; a sleeve-bearing, wool-yarn lubricated motor; a ball-bearing, grease-lubricated motor; and sleeve-bearing-ring, oil-lubricated motors of new design.

One of the new developments shown by the General Electric Co. was a small mechanical-drive, non-condensing steam turbine, for driving pumps, fans, and similar industrial equipment. There was shown also a variety of motors of the latest types, an improved magnetic switch, a pole-

changing switch, and a high-voltage compensator. Other recently developed equipment shown by this company was a line of dust-tight, totally-enclosed, fan-cooled, induction motors. A series of low-voltage, twin-cathode lamps, filled with various inert gases was a new development shown by General Electric Vapor Lamp Co. Possible applications of these lamps are for display purposes, and markers. This new development is expected to reduce gaseous-discharge lighting to a low cost. Improved types of Konnectors and new applications of these mercury-contact switches were also shown. An interesting feature of the exhibit was a model of an industrial plant in which lighting by mercury-vapor lamps was controlled by means of a photo-electric cell.

The exhibit of Howell Electric Motors Co. included motors built in the new Nema frames and a modified condenser type, single-phase motor. The motor has no brushes, commutator, centrifugal switch, short-circuiting device, or soldered rotor contacts. A Multumite safety steel-enclosed three-paneled switchboard, including a bus-tie section, was demonstrated by I-T-E Circuiting Breaker Co. This switchboard will mount hand, motor, and solenoid-operated air circuit breakers which are equipped with primary and controlled disconnecting contacts, indicating lamps, etc. The Reliance Electric & Engineering Co. showed its Type T, d.c., adjustable-speed motor, which, it was explained, is now being applied to spinning frames and to each beam roll of dye jigs, to give constant speed and tension and, in the former application, to increase the production.

Mechanical Transmission

Developments in mechanical power transmission included improved V-belt drives, flexible couplings, chain drives, bearings, variable-speed devices, speed reducers, and belts.

A new V-belt sheave constructed with a cast-iron hub and pressed-steel groove, was exhibited by the American Pulley Co. This sheave is light and has interchangeable bushings. This company also showed two new pressed-steel barrel stands—one portable, and the other stationary—and a case truck of strong and durable construction. The Cleveland Worm & Gear Co. featured the newly developed American flexible coupling, so constructed that flexibility is accomplished without bending, flexing, or stressing any parts. A new line of high-speed stock-motor drives was shown by the Diamond Chain & Mfg. Co. This company also displayed a chain drive operating at 3,600 r.p.m., and an improved type of oil-tight lubricating equipment especially designed to prevent seepage. The Fafnir Bearing Co. showed a new, felt-seal bearing which incorporates an oil- and dust-proof seal as an integral part of the bearing, and is especially applicable to smaller, high-speed equipment, such as portable tools and electric motors.

Helical speed reducers, equipped with anti-friction bearings on all shafts and helical gears, were featured by Foote Brothers Gear & Machine Co. This company also displayed an improved-model, medium-duty reducer, equipped with Timken bearings on the worm-gear shaft, and radio or thrust ball-bearings on the worm shaft. Improved silk-spindle belts, claimed to have greater durability and uniformity, were shown by E. F. Houghton & Co. This concern demonstrated a new testing machine, comparing the relative efficiencies of flat belts and multiple-V belts, to the advantage of the former.

The Lewellen Mfg. Co., now represented by Petty & Wherry, Inc., in the New York metropolitan district, demonstrated its variable-speed transmission enclosed in a new seal-tight casing for protecting the working parts against moisture, dust, acid fumes, and other sources of injury. Link-Belt Co. exhibited the new P.I.V. variable-speed transmission described in last week's TEXTILE WORLD. A recent development shown by Morse Chain Co. was the improved, automatic ring oiler designed to deliver clean oil to the moving chain at all times.

Norma-Hoffmann Bearings Corp. displayed its new Grea-Seal felt-protector ball bearings, in which the felt closure for protecting the bearing against the entrance of moisture and foreign matter, and for preventing the escape of lubricant, is an inherent part of the bearing itself. The Philadelphia Gear Works exhibited its Gilmer-V-belt drive unit embodying improved sheaves. Variable-speed-transmission controls shown by the Reeves Pulley Co. included the electric remote control, which makes possible regulation from two or more remote-control stations, and the electric automatic control, which makes possible combining various operations by automatic synchronization. This company featured also a completely enclosed transmission, equipped with pivoting motor base.

A motor-mounting base, provided with long slots and spreading arms to accommodate any motor from ¾ to 50 hp., and applying tension on the belt by the weight of the motor, was demonstrated by J. E. Rhoads & Sons. Emphasis was placed on the ability of this base to permit the efficient use of a flat belt on short centers, with pulley ratios up to seven to one. This concern also showed new hydraulic leather packings, and a new Speedolite cotton-warp, linen-filling, split-heddle-woven endless belt, now being applied experimentally as a gainer belt on rayon spinning frames, and already successfully applied to centrifuges. A new extended inner-race ball bearing and a pillow block embodying this bearing, already extensively adopted for cotton ginning, were demonstrated by S K F Industries, Inc., emphasis being placed on the advantages of self-alignment and quick and easy mounting on shafts without locknuts, washers, or sleeves. A newly standardized universal solid pillow block for general machine applications, accommodating a number of different types of ball or roller bearings, was also shown by S K F. The feature of the Timken Roller Bearing Co. display was a new demonstrating exhibit showing the capacity of bearings for carrying thrust loads and demonstrating the reduction which bearings effect in friction.

Lubrication

Lubrication equipment on exhibition included oils, greases, central lubrication systems and automatic oil feeders.

The Bijur system of central lubrication, which has been used for some time on motor cars and has more recently been introduced to the industrial field, was demonstrated by Bijur Lubricating Corp. In the exhibit of the Keystone Lubricating Co. was displayed the new Pneuma-Lectric lubricating system, having in operation three units under the control of one timing clock. Automatic oil feeders, as now being applied to industrial plants, were shown by the Nathan Mfg. Co. Socony dewaxed paraffin-base motor oil was one of the newly developed lubricants displayed by the Standard Oil Co. of New York. This company also featured newly developed steam cylinder oils and Diesel engine oils. A Packard Diesel engine, lubricated with Texas products, was shown by the Texas Co.

Recording and Indicating

Many new recording and indicating instruments were displayed.

Amthor Testing Instrument Co., Inc., exhibited a new pressure-gage tester of the dead-weight type, and a new U-gage in which the tube may be replaced quickly without removing the gage from the apparatus. The Bailey Meter Co. showed new Selsyn-operated devices for long-distance transmission of various factors. One of these devices was a power-type Selsyn pressure transmitter operating a 36-in. double-faced internally-illuminated Selsyn indicator. New developments shown by the Bristol Co. included a multi-reading, recording pyrometer set flush and sliding out for ease of adjustment; a recording voltmeter for three-wire systems; a totally-enclosed electric indicating pyrometer and twelve-point switch combined; and a vacuum gage showing the abolute pressure of from 28 to 31 in. of mercury vacuum corrected for barometric variations.

The Brown Instrument Co. showed a new electric flow-meter manometer. In addition to an all-steel gage for high-pressure and high-temperature applications, Crosby Steam Gage & Valve Co. exhibited a relief valve provided

with a pressure-type lifting lever, designed to prevent leakage where any back pressure might be encountered. In its exhibit of indicating, recording, and controlling instruments, The Foxboro Co., featured a new high-pressure flow meter for working pressures up to 2,500 lb. per square inch.

A smoke recorder, shown by the Leeds & Northrup Co., operates from a thermocouple without using a photo-electric cell and has a self-cleaning lens. It is constructed with a constant potential at one end, and the lens focuses the rays from a lamp onto a thermopile. This company also featured a direct-reading leakage recorder which indicates the amount of leakage of cooling water into the condenser. A distance-reading thermometer which can be used at any distance up to 150 ft. was displayed by the Liquidometer Corp. In its two exhibits the Permutit Co. featured new models of water-softening equipment, electro-chemical feeds of both constant and intermittent types, and new models of Ranarex CO_2 and gas-density recorders.

New models of limitator, displayed by Power Control Corp., included the Model 1-A device, designed for use in conjunction with electric melting furnaces; Model 2, for use with motor loads; Model 3, with motor-driven, air-compressors; and Model 4-B for use where power is purchased and is also generated by an industrial plant. Pressure Snubber Co. demonstrated the Ray pressure-gage snubber, a newly developed self-cleaning, pulsation absorbing device for eliminating fluctuation and shock on pressure gages. A new mica water-gage for high-pressure service was shown by the Reliance Gauge Column Co.

Republic Flow Meters Co. exhibited two new meter bodies developed to meet the trend toward high pressures in industrial plants; the Model 134 control pyrometer, designed to handle direct any load up to 10 kw. without the use of auxiliary equipment of any kind; and a new master panel, designed to show plant efficiency at a glance. Improved volt-ammeters and graphic a.c. and d.c. instruments were displayed by the Roller Smith Co. The Fulton Sylphon Co. featured a new automatic radiator valve, which is a combination packless valve and temperature-control unit to be attached to individual radiators. It is suitable for any two-pipe steam-heating system, utilizing either floor or ceiling radiators, where the steam pressure does not exceed 10 lb. per square inch.

New and improved control and recording instruments shown by the C. J. Tagliabue Mfg. Co. included the round-form, flush-mounted type for power-plant panel-board installation. This company also featured the new TAG mono indicating recorder (all-metal type) for indicating and recording the percentage of CO_2 and CO_2 present in flue gases; and a new type of temperature-control apparatus which has been applied to the Johnson rayon warp slasher to permit even drying of rayon. Taylor Instrument Cos. emphasized the new Tycos flush-mounted instruments, including recording thermometers and pressure gages for one, two, or three pens, in any combination.

Heating and Ventilating

Exhibits of improved heating, ventilating, and air-conditioning equipment included many items of interest.

A new combination window-ventilator air cleaner, which ventilates rooms and at the same time reduces outside noises, was shown by American Air Filter Co., Inc. A line of aircraft-propeller fans and ventilating equipment was featured by the American Propelior Co., the core being of white-birch laminations, matched, balanced, and tracked to eliminate vibration or fluttering. The Arco Radiatherm, a simple, thermostatic device for automatically and individually controlling the steam supply to each radiator on two-pipe systems, was shown by American Radiator Co.

A 6-in. impeller blower of the multiple-stage disk-fan type was featured by DeBothezat Impeller Co., Inc. This company also displayed a new unit-heater of the floor-ceiling type, and the bifurcator, a new device for duct-ventilation which permits operation of a pressure-disk fan inside the duct with the motor located outside. In the display of the Carrier Corp., several new developments of the Carrier Engineering Division, Brunswick Kroeschell Division, and the Carrier-York Division were shown. One of the features was a new unit air conditioner, said to be as efficient as central-station installations, with units available in capacities up to 10,000 cu.ft. per min. Features include recirculation of air and automatic control. Air entering the unit passes through a sound absorber, through pre-heaters to the spray chamber, through re-heaters, and then to the fan duct. A new centrifugal refrigerating unit of compact design, which is said to require only about one-third to one-half the floor space of the usual apparatus, was also shown.

Among the new products featured by Warren, Webster & Co., are included the Webster boiler protector and the Webster Hylo vacuum variator. The latter device provides a means for regulating, according to outside weather conditions and temperature, the amount of steam supplied to vacuum systems. In the booth of The F. M. Webber Co. was shown a new portable, pedestal-mounted, two-airplane-propeller, "Kool Blast" fan of high capacity, developed by the Hartzell Propeller Fan Co. The L. J. Wing Mfg. Co. exhibited a new high-pressure radiation unit heater embodying hairpin construction for good drainage, and compression couplings between the header and each tube for insurance against leakage.

Another view of the exposition at Grand Central Palace with the steam generation exhibits in the foreground

Miscellaneous

Miscellaneous equipment included insulating material, mixing machines, tanks, hoists, cleaners, welders, and counters.

Strong and durable socket head shoulder screws or stripper bolts, which are expected to find a wide use in machine designing and fast die work, were displayed by Allen Mfg. Co. A development shown by Armstrong Cork & Insulation Co. was Temlock, a new fiber-board insulating material employing a Southern-pine base. This insulation was shown both in $\frac{1}{2}$- and 1-in. thicknesses, and is said to be distinguished by its low moisture-absorbing properties. Another recent development shown by this company was Corkoustic, a new product applicable to acoustical work. In the booth of the Alsop Engineering Co. was exhibited a newly extended line

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New Type of Executive Engineering

Urged in A.S.M.E. Progress Report

NEED of a different kind of engineering — management or executive engineering which can keep production within bounds and maintain prices where they should be—was emphasized in the Progress Report presented at the meeting of the Textile Division of the American Society of Mechanical Engineers, held on Dec. 3, 1930, in the Engineering Societies Building, 29 West 39th St., New York.

The following officers were elected by the Textile Division of the American Society of Mechanical Engineers, for the ensuing year: Executive Committee: Paul A. Merriam, chairman; Henry M. Burke, vice-chairman; Mark A. Golrick, secretary; William L. Conrad, H. V. W. Scott, and Clifford Ramsay. Associate members: J. A. Campbell, James A. Cox, Jr., Vernon Royal, and Charles Miller.

The report, which was presented for the executive committee by Paul A. Merriam, was followed by discussions of the lubrication of cotton mill machinery and special applications of electric motors in cloth-finishing plants. Henry M. Burke, chairman of the division, presided. An abstract of the report follows:

As pointed out in the progress reports of both 1928 and 1929, there had been an increasing demand for engineers and technical men by the industry. Apparently these very engineers and technical men, by bringing increased efficiency to the industry, have been a factor in the present overproduction that has caused the slump. What is most needed now is a different kind of engineering: management or executive engineering that can keep production within bounds and maintain prices where they should be.

Mill Buildings

When there was an abundant supply of long-leaf-pine timber at low cost, and good quality of brick could be had and laid at a cheap price, there was little to decide as to the selection of materials for mill buildings. Consequently slow-burning or mill-type construction, comprising brick walls, wood sash, wood columns, hard-pine floors, and long-leaf-pine timbers, was considered standard. At that time reinforced concrete and steel construction were much costlier than the slow-burning type. Later, however, long-leaf-pine timbers became scarce, and serious consideration was given to other types of construction. The design of reinforced-concrete became more standard and simplified, and building contractors became familiar with it, and in many cases it was found that the more stable floor construction was economical, even though the cost was higher.

Likewise steel construction became more common for cotton-mill work, and in late years steel beams have been used in many plants. Brick or concrete walls, with a maximum of steel-window-sash area, steel beams, and hard-pine floor plank, give a rigid and strong floor and permit the spacing of columns far enough apart to accommodate the machines and their proper working alleys. This type of construction is rigid enough to eliminate vibration or deflection of the floors. The greater ceiling heights, with the large window areas, give well-lighted and properly ventilated interiors that are attractive and in which the working conditions are the best.

The standardization of many building products has been further perfected, as, for example, steel sash; also, the steel concerns are now furnishing a much greater variety of shapes, and consequently it is possible to select, economically, almost any desired depth and weight of steel I-beam or channel which formerly would have been considered special. Substantial developments have been made in methods and cost of treating floor and roof planking to resist dry rot and in insulation of roofs to prevent ceiling drip in rooms of high humidity. Heat-absorbing and light-diffusing is now obtainable at reasonable prices.

Progress has been made in the plumbing and sanitary conditions in the mills, and modern electric-refrigerated drinking-water systems have become more generally regarded as standard equipment.

Woolen and Worsted Machinery

Some of the outstanding developments in wool machinery are as follows: Cards have been developed employing more cylinders in a single card, with an increased production and an improved quality of roving. There is a decided trend toward the adoption of the center-draw, broad-band type of feed. A card-stripping device of the vacuum type has been developed for both woolen and worsted cards. New reciprocating table feeds and improved squeeze rolls have provided better preparation of the stock. There has been a growing popularity and adoption of frame spinning of woolen yarns, and this has put the manufacturers of mules on their mettle so that we see a marked development toward longer mules of a wide gage for both woolen and carpet yarns. In some cases the capacity of mules has been increased as much as 50%, with the result that a spinner can handle a greater number of spindles.

One manufacturer has brought out a combination wool garnet card which eliminates the separate garneting operation. The cone system of twisting has been extended to wortsed and woolen yarns with encouraging results. The winding of cones has been improved by new high-speed cone winders with a gear motion in the head which gives positive operation and maintains speeds. Variable-speed spinning is being experimented with on worsted yarns, and it is reported that one worsted mill has so equipped all its spinning frames, using variable-speed d.c. motors to accomplish the required motion.

Perhaps the outstanding innovation in weaving machinery is the automatic pick-and-pick loom. For better preparation of warps there is a new hot-air cylinder slasher adapted to wide warps. This eliminates matched-beam work. By the employment of a modified Axminister weaving, rug patterns can be brought through to the back as in true Oriental production.

For the finishing of wool fabrics, both the washer and the fulling mill have been increased in size and speed. Slack-loop washers of this type have been finding a place for themselves for cotton and rayon goods during recent years. One manufacturer has brought out a washer with a self-contained one-reduction motor drive. Another manufacturer features devices for throwing an unbroken sheet of water on the goods, and a non-leaking suds box so arranged as to carry the soap back into the tub while allowing the dirty water to escape.

There is a marked tendency toward a more general use of the mantel steamer, or so-called "semi-decating" machine. Multiple-blade shears which were introduced in a small way a year ago are now obtainable in wide ranges and combinations. In the case of carpets, shears have been developed up to 20 ft. in width, and have recently been equipped with air-driven selvage trimmers. Tentering dryers for woolens and

worsteds have been built of even greater capacity than in previous years.

Cotton Machinery

One of the principal advances of the year is the continued gain in popularity of the one-process picking. One manufacturer has developed a new cotton card with only 48 flats in place of the 106 ordinarily employed. There seems to be an increased trend toward combed yarns, and to meet this trend the manufacturers of combers have brought out new models incorporating various important improvements, such as the flexible top comb and the auxiliary nipper knife.

Rayon and Silk Machinery

Probably the most important trend during the year in silk and rayon machinery has been the result of the recent demand for high-twist, low-luster yarns, such as crepe and grenadine yarns. This has produced a number of twisters of improved design. The tendency is toward double-deck machines, and the machines are designed to produce tram, organzine, crepe, and grenadine as required, with twists varying from one to eighty turns per inch. Winding machinery has been improved as well.

High-speed rayon warpers have been developed which apply to rayon the principles of high-speed cotton warping. For the sizing of rayon warps a rayon slasher is now available, equipped with automatic temperature control and a three-roll quetch arranged for easy adjustment of pressure for all weights of rayon. A cooling cylinder follows the usual dryers so that the rayon is not beamed hot.

Several looms have been brought out designed especially for rayon. Two of the improvements on looms for rayon are take-up drums covered with rubber so as to eliminate injuries to the fiber and an improved steel heddle so designed that it cannot cause abrasions of the filaments during shedding.

Knitting Machinery

A development which has found more ready acceptance during the past year among the knitters is the yarn-conditioning room. This is a metal-paneled room equipped with a unit air conditioner in which yarn on the cones can be placed under controlled conditions of temperature and humidity until a uniform regain is established.

The tendency is still toward developing machines that will do finer work. Among other developments is a fully automatic jacquard flat-knitting machine. Variable-speed motor drives have been applied to full-fashioned machines with decided advantage.

Bleaching, Dyeing, Printing, Finishing

A new fuel for singeing has come into use during the past year in certain plants where city gas is not available, namely, compressed condensates of natural gas. One manufacturer has brought out a rotary plate singer that is internally fired with an oil burner, thus materially reducing the cost of operation of this same singer as formerly fired by gas.

A new development in kier boiling is the so-called pump and percolator kier. A continuous kier has been offered to the industry, in which cloth is treated continuously either in the open width or in the rope, saving several hours over the prevailing method of kier boiling. The year 1930 has also seen peroxide bleaching firmly established in many plants.

Improvements have been made in rope washers both of the slack-loop and of the tight-strand type. A new slack-loop washer employs a suds box, which catches the dirty water squeezed out of the nip and so assists in securing very rapid and thorough cleaning. It also has a level control drain, and the countercurrent-flow principle, and is fitted to take a wringer mounted on the washer frame, so that a separately installed squeezer is not required.

The tight-strand washer has also been improved. Not until this last year has a practical counter-current flow tub been developed. This washer will scour more effectively than previous machines, and is in actual operation, using considerably less water than is generally considered necessary. For washing, boiling off, and otherwise treating rayons and silks a two-reel countercurrent slack-loop tub has been developed.

Improvements have been made in dyeing machinery, particularly for handling rayon. A skein-dyeing machine of the circulating type especially designed to insure proper penetration has been brought out. The familiar vacuum extractor, formerly used exclusively on woolens and worsteds, has been re-designed by several manufacturers for use on rayon and celanese. A reel-dyeing machine has appeared of all-metal construction, which is equipped with an automatic stop for tangles and a pin rail made adjustable to permit handling of goods of differing weights. An all-electric jig has been developed which has a motor on each beam roll. This permits one motor to act as an electro-dynamic brake while the other motor is driving, and assures smooth, even, and controlled tension.

In the printing field, a loop-type dryer for printed goods has been placed in regular service. A great deal of attention is being paid to the print-machine ager in an effort to secure maximum color value in the development of the dyes.

A demand for preshrunk shirtings has brought about numerous methods and machines for producing a fully shrunk finish. In fact, this is probably the outstanding finishing development of the year. Some of the other miscellaneous developments of the year are: a print-machine copper-roll engraving machine that employs the jacquard principle, progress in photoengraving of textile patterns, pressure straining and centrifugal clarification of color plates, and the use of chromium plating for engraved schreiner calender rolls.

During the year just past, two major agencies have been created for furthering research in our industry.

A.S.M.E. Papers Discuss Cotton-Machinery Lubrication and Use of Electric Motors in Finishing Plants

TOPICS of special importance to textile men discussed at the meeting of the Textile Division of the A.S.M.E., were lubrication of cotton machinery and special applications of electric motors in cloth-finishing plants. L. A. Baudoin, assistant supervising engineer, Sinclair Refining Co., New York, led the discussion of the first subject, and A. M. MacCutcheon, engineering vice-president, Reliance Electric & Engineering Co., Cleveland, Ohio, that of the second.

Mr. Baudoin stated that cotton textiles require absolute cleanliness during manufacture and finishing; and all operations including the lubrication of the equipment are secondary to this requirement. Present designs incorporate modern developments which aid lubrication, and also provide a reserve supply of lubricant with ample protection to the fabric. Frequent application of minimum quantities of lubricant is accepted practice, but "freak" oils are not necessary.

Cotton-Machinery Lubrication

In his paper, which was offered as a contribution by the lubrication engineering sub-committee of the petroleum division, Mr. Baudoin said in part:

Lubrication of textile machinery resolves itself to the consideration of groups of machines, each essential to the finished product, but performing their several duties as independent operations on the fiber, yarn, or cloth. To

Table I—Textile Machinery with

Equipment	Lubricating Frequency	Cleaning Periods	Product No.
Bale breakers, plain bearings	Every 2 days	Each week	1
Lattice feed table, plain bearings	Every 2 days		1
Openers:			
Reserve box automatic feeders:			
Plain bearings	Every day		
Ball bearings	Every 6 mo.		8
Creighton vertical opener:			
Plain bearings	Every day	Each week	1
Step bearing. (The step bearing of this machine is surrounded by water jacket which must be kept filled)	Every day		1
Vertical openers, ball bearings. (Provided with pressure-gun fittings).	Every 6 mo.	Each week	8
Beater type, ball bearings	Every 6 mo.	Each week	8
Condensers, oil tubes to bearings	Every day		1
Exhaust fans, ring-oiled bearings	Every month		1
Distributing conveyors, plain bearings. (Gears are well protected from dirt)	Every day	Clean boxes every day	1
Gear boxes	Every month		1
Combination opener:			
Breaker picker	Twice a day	Every 6 mo.	1
Fan bearings (roller)	Every 6 mo.		8
Breaker lapper, plain bearings	Every day	Every 6 mo.	1
Beater roller bearings	Every 6 mo.		8
Evener cones roller bearings	Every 6 mo.		8
Lap racks roller bearings	Every 6 mo.		8
Finishing picker. (Draft begins)	Twice a day	Every 6 mo.	1
Lapping picker, plain bearings	Every day	Every 6 mo.	1
Roller bearings	Every 6 mo.		8
Waste pickers:			
Willow, roller bearings	Every 6 mo.	Every 6 mo.	8
Plain bearings	Every day		1
Card and picker waste cleaners	Every day	Every 6 mo.	1
Roller bearings	Every 6 mo.		8
Roving and hard waste cleaners	Every day	Every 6 mo.	1
Carding machines, cylinders. (These bearings and many others are kept filled with grease for safety, oil is used as well every day.)	Every day	Every day	1
Licker-ins	Every week	Every day	1
Doffers	Every week	Every day	1
Slow moving parts, bearings and gears	Every day	Every day	1
Comb boxes	Every week		2
Sliver, front and back rolls	Every day	As cans run empty clean back of machine	2
Top rolls, gears	Every day	Fronts each day	1
Ribbon laps, plain bearings	Every day		1
If roller bearings	Every 6 mo.		8
Combers, cylinder shafts. (Many plain bearings of this machine are provided with waste poeket to retain supply of oil.)	Every day	Twice a year	1
Head end gears and cams	Every day		1
Fan, plain bearings	Every week		8
Roller bearings	Every 6 mo.		8
Steel roll	Every day		1

Equipment	Lubricating Frequency	Cleaning Periods	Product No.
Detaching rolls. (These rolls have removable bushings and oil is applied by hand after the bushings are removed; see text)	Once a week		3
Guide arms	Twice a week		1
Drawing frames:			
Fast parts and driving gears	Every day	Steel rolls scoured 1 mo.	1
Lower rolls	Every week	Leather rolls each week	8
Top rolls	Every day	Clearer washed each hour	1
Head and foot end gears	Every day		1
Newer equipment: roller bearings	Every 6 mo.		8
Slubbers			
Speeders			
1st intermediate			
2nd intermediate			
Jack frames			
Fine moving frames			
Bobbing gears and spindles	Every doff		1
Spindle wells	Every month		5
Plain bearings and gears	Every day		1
Bolsters	Every week		1
Front rolls	Every day	Every week	1
Middle and back rolls	Every week[1]		
Top rolls	Every week		1
Bottom rolls, wind back and builder gears	Every 2 wks.		1
Differential motion	At cleaning period	Every 6 mo.	1
Spinning:		Inspection once per year	
Mules:			
Spindles	Twice a day		4
Overhead drives	Every day		1
Live head, back head	Every day		1
Cylinder bearings, stud rollers	Every day		1
Back shaft, fallers	Every day		1
Carriage wheels, band pulleys—leather rolls	Every day		1
Ring spinners:			
Spindles, old type	Every 2 wks.		4
Spindles, new type	Once a month		4
Cylinder shafts, old	Twice a week		1
Cylinder shafts, new (ring)	Once a month		1
Roller bearing	Every 6 months		8
Head gears, old	Once a week		8
Head gears, new	Worm runs in bath		1
Front steel roll	Every day		1
Back steel roll	Every week		1
Top and middle rolls	Twice a week		1
Twisters, spindles, old. (Run wet.)	Each week		5
Spindles, new	Each month		5
Cylinder and roll bearings	Every 2 days		1
Rings	Every doff		9
Head gears, studs	Every day		1
Fancy twisters, same as above except that they run without water			
Spoolers, spindles, old	Once a week		1
Spindles, new	Once a month		1
Cylinder shaft	Once a week		1

avoid complications, only cotton textiles are considered in this discussion.

The care of textile machinery is one of the lessons that must be learned by actual experience with the equipment. The care includes lubrication, because the performance required of the intricate machines used in the textile industry can be attained only when friction has been reduced to a minimum. It is well known that this is not an actual achievement, and this paper points out a few handicaps.

In the first place, many textile mills, long established, are using machinery designed and built some years before lubrication arrived at the stage of perfection forced by the demands of automotive equipment.

In many instances where a small number of large capacity machines could be replaced to advantage it has been done, and the lubrication features of these new machines are in line with best practice of today. For instance ball and roller bearings are replacing plain babbitted journals on fan shafts and all load-carrying bearings. Gear sets are well protected from dust and lint and so arranged that the cut gears run in a bath of oil, and in cases where first cost prohibits redesign to incorporate roller bearings, the ones provided are equipped with pressure-gun fittings and reservoirs for grease, and provision to shield the bearing from the work so that the lubricant does not come in contact with it.

Throughout the cotton-manufacturing industry lubrication has been a secondary consideration, being forced into the near background by the absolute necessity of keeping oil and grease from spotting the goods.

Hand oiling of intricate machine parts requires a conscientiousness bordering on the superhuman to insure that each and every bearing and stud requiring it has an ample oil film. In this case experience alone is no safeguard, and when once passed by the bearing, stud, or oil hole is soon passed again, and worst of all, the corresponding location on every similar machine is soon absolutely forgotten and neglected until excessive wear causes misalignment or actual breakage, contributing to lowered production.

Textile mills must have hundreds, and in some cases thousands of certain machines; and one manufacturer regrets that the price at which the machines are sold does not allow equipping them with devices for holding an ample supply of oil and regulating its flow to the working parts. Oil holes and open bearings make up the oiling system on these machines. But the sky is clearing, because another manufacturer is now experimenting with one-shot oiling, and has built two large machines equipped with this system.

Passing from the spinning and weaving departments to enter that of cloth finishing, most of the lint and dust is left behind, and many of the machines are equipped with roller bearings or pressure-gun fittings and recesses for excess lubricant. Where gear sets are required, they are well protected and contain ample lubricant. However, some of the cloth-handling machines are retained with their characteristic plain bearings.

Cleanliness is an absolute necessity and frequent cleaning periods have always been in order. Lint and waste allowed to accumulate on or near bearings and wearing surfaces cause endless trouble from wear because of the sand and grit present; so all machines, from bale breakers to cards, are brushed daily and thoroughly cleaned each week. At one mill the cans supplying the slivers are all allowed to

Frequency of Lubricating and Cleaning

Equipment	Lubricating Frequency	Cleaning Periods	Product No.
Winders, drive shaft	Once a month		8
Cam winding motion	Once a month		1
Universal winders. (Run in oil bath well protected from lint)	Once a week		1
Reeler, shaft bearings	3 times week		1
Traverse motion	3 times week		1
Swing-gate bearing	Once a month		8
Warper, cylinder	Every week		1
Beam arbors	Every day		1
(When roller bearings)	Every 6 mo.		8
Balling attachment	Every day		1
Floor stand	Every day		1
Quilling machiners:			
Spindles	Every month		4
Cylinder shaft, studs, gears	Every day		1
Universal filling winder shaft	Every week		1
Cam winding motion	Every week		1
Slasher cylinder bearings. (Steam rolls)	3 times week		6
Balance of machine	3 times week		1
Weaving:[2]			
Pick cams and balls			
Pick shaft bearings; crank arms; crank-shaft bearings; rocker shaft boxes	Every day		1
Cam-shaft bearings, auxiliary shaft boxes; harness cams; idle gear stud; treadle roll pins; filling cams and followers; protector-rod bearings; friction-pulley parts	Every 2 days		1
Treadles; shuttle feeler bushing; oscillator cam follower; transferer; other shuttle and knock-off parts	Every 3 days		1
Loose pulley and shipper; lay guides; fork slides; starting-rod bearings; take-up parts; spring shaft; let-off parts; beam and whip roll bearings; harness roll bearings; Lacy top; parallel stud and spring; bobbin disc; pawls and support	Once a week		1
Cut gears; parallel tongue; temple thread cutter; temple bar; cutter spring and stud; shuttle feeler cam path	Once a week		8
Occasionally grease bemble. (Very small quantity required.)	Once a week		8
Drop of oil in filling motion shipper bushing	Once a week		1
L. O. internal gear and pinion, and path of nub of controlling lever link	Once a week		8
Jacquard attachments	Once a week		1
Brushers (horizontal and vertical), fast-moving parts	Every day		1
Slow-moving parts	Every week		1
Inspection machines	Every day		1
Folders	Every day		1
Presses (screw)	Every week		1
Cloth-finishing machinery			
Singers, plain bearings	Twice a day		1
Roller bearings	Every 6 mo.		8
Washing; shafting	Once a week		1

Equipment	Lubricating Frequency	Cleaning Periods	Product No.
Bleaching:			
Kier—piling machine gear box	Every 2 wks.		8
Squeezers: large bearings	As needed		10
Other bearings	Once a day		1
Drier, pressure gun fittings	Once a week		8
Plain bearings	Once a week		8
Winders	Twice a day		1
Shearing machines: plain bearings	Twice a day		1
Roller bearings	Every 6 mo.		8
Shear knives (edges) (Saturated felt.)	Twice a day		7
Float thread shearing machine. (If pressure fittings provided use grease No. 8)	Twice a day		1
Loop cutters	Twice a day		1
Unrolling frames	Every day		1
Railway sewing machines	Every day		4
Spreader rolls	Every day		1
Mercerizing frames, wash box	No oil used		
Traveling chain	Caustic soda acts as lubricant		
Diastoforing: frames	3 times a day		1
Scourers	Twice a wk.		10[3]
Dyeing: jig	Once a week		8
Roper	Once a week		8
Drier (pressure fittings)	Once a week		8
Slop padders	Once a week		8
Indigo dyeing rolls	Every day		1
Shafting	Every day		1
Printing machines: cylinder bearings	Every day		6
Offset rolls	Every week		10[3]
Inking rolls, etc.	Every day		1
Dry cans	Every day		6
Steamers (pressure fittings)	Once a week		8
Ager (pressure fittings)	Once a week		8
Soapers: ropers	Once a week		8
Soapers: open	Once a week		8
Stretcher drier, pressure fittings	Each week		8
Tenter frames: drive ends (sight feed cups)			1
Traveling chains	3 times week		1
Gears	Every week		8
Calenders, main rolls. (Steam)	Twice a week		10[3]
Balance of machine	Twice a day		1
(Some calenders have water-cooled bearings.)			
Cloth folding machines	Every day		1
Cloth guides (automatic)	Every day		1
Cloth winders, measurers	Every day		1
Trade marking machines	Every day		1
Inspection and trimmer frames	Every day		1
Inspection perch	Everyday		1

[1] When front rolls are cleaned.

[2] Copied from manufacturers' bulletin.

[3] This hard grease may be obtained in block form and applied to the bearings on a perforated metal plate previously fitted to the bearing. The journal heat allows sufficient feed from grease cake through the perforations. Grease should be selected which will not char or plug up perforations.

run out together; and before full cans are replaced, the back of the machine is thoroughly cleaned; the fronts are cleaned every day.

Grit getting into bearings wears them out rapidly, but the lint and fly which adhere to the outside of bearings and adjacent parts absorb oil readily and actually dry out the bearing by capillary action.

Mill owners and agents naturally consider cost of production. Operators and machine designers consider lightening the operation, convenience of handling, cleanliness, and adaption to high speed when any new equipment is contemplated. Lubrication must give way to cleanliness.

Table II—Oils Required for Textile-Mill Lubrication

Oil	Flash, Minimum	Viscosity At 100° F. Maximum	Viscosity at 210° F. Minimum	Compound
No. 1	330	265	45	None
No. 2	380	770	59	None
No. 3	405	390	55	High film strength
No. 4	330	78	36	None
No. 5	355	105	38	None
No. 6	525	...	150	None
No. 7	330	105	38	High film

Grease

No. 8 Clean non-drying grease approximately 190° F. melting point, having approximately 280 worked penetration.
Oil portion composed of highly filtered oil of approximately 300 viscosity.

No. 9 White grease insoluble in water of medium consistency.

No. 10 High melting point of approximately 400° F. Oil portion composed of cylinder stock.

Lubricant manufacturers must work out the problem with existing equipment, but are insisting that, where necessary, future designs incorporate provision for an adequate supply of the proper oil to suit that particular condition.

Cleanliness is paramount, and so freak oils have found their way into the textile industry to the extent that one of the prime requisites is that it does not flow at room temperature. Another condition of combination high pressure and hot bearing is met by removing the bearing cap entirely and replacing it with a piece of leaf tallow or suet. That serious trouble has not occurred is simply that the journal speed is slow.

The oils actually required for textile-mill lubrication are comparatively few in number, their characteristics and particular conditions of service being as shown in Table II.

High-grade straight mineral oils should be chosen where possible for textile-mill service, because when well refined their characteristics do not change in service. They do not tend to form gummy residue nor become rancid. In some special cases, such as wet twisters, water-resisting compounds are necessary, and in the case of shearers where the knives run steel to steel a special compound is necessary. Calenders, dry cans, and printing machines running at high temperature and high bearing pressures require a filtered oil of high viscosity. Other bearings subject to high pressure, but slow speed, require a special heavy grease that will feed slowly and not carbonize under the temperature or dry out in service.

The list of textile machinery (Table I) for manufacturing and finishing cotton cloth is given for completeness. The key numbers given with the lubricant indicate the particular

grade to use. The application period is given as a guide only, but conforms to actual experience in large plants manufacturing and finishing cotton cloth. The periods shown for looms were copies verbatim from one manufacturer's bulletin.

The author wishes to thank Messrs. F. K. Hendrickson and S. H. Hillard, Whitin Machine Co.; W. H. Chase, Draper Corp.; L. A. Latham, Crompton & Knowles Loom Works; E. H. Marble, Curtis and Marble Co.; C. F. Broughton and W. O. Buzzell, Wamsutta Mills; and Arthur Hirst, American Printing Co., for their kind cooperation and a'd in offering details for this paper.

Electric Motors in Finishing

In his remarks on the special applications of electric motors in cloth-finishing plants Mr. MacCutcheon stated that his purpose was not to claim for any type of construction of motor particular and specific advantages, but rather to lead to careful consideration of all types and constructions which are available, and the selection of that type and construction which, all points being considered, is most suitable for the particular installation under consideration. He said in part:

Less than a quarter of a century ago, the principal topic of discussion in connection with electric motors in industry was whether the advantages resulting from their use warranted the expense in connection with their purchase and installation. Today, this question is little discussed. Electric motors are accepted in industry as the most convenient means of applying power to a driven machine. Attention now centers upon the selection of electrical equipment which is simplest in construction, most easily maintained, and which returns the largest number of dollars in output of products for dollar of investment. The specialist in motor applications should not only consider the results which are to be accomplished in connection with the driven apparatus but also should take into the fullest account conditions under which the electrical equipment shall operate. Various types of motors have been developed to meet all manner of conditions, the horizontal motor when the application is simple, the vertical motor when the advantages to be gained justify the construction, the special motor built into the machine where compactness is required.

Special classes of insulation have permitted the use of electric motors in the presence of moisture, heat, acids, and alkalis. The fully enclosed motor should be applied in exceedingly dirty locations or in an atmosphere impregnated with strong acids and alkalis. During recent years the electrical industry has developed types of motors in which explosive gases may become ignited without the flame being communicated to the surrounding atmosphere. A recent development is the fully enclosed fan-cooled motor which is a compromise between the advantages of the fully enclosed motor and the less expensive and smaller open motor.

Fully enclosed fan-cooled motors have been largely used in the automotive industry excluding metal dust and cutting oil, not only protecting the winding but preventing the clogging of air gaps. While this type of motor has not as yet been largely used in cloth-finishing plants, there is unquestionably a very considerable field of applications in dyehouses and bleacheries.

When consideration is given to the proper operation of the driven machine, the electrical characteristics of the motor are of major importance. For reasons which are well understood, practically all distribution systems are alternating current. The simple squirrel-cage motor is, of all kinds, the simplest construction, most rugged, and lowest in first cost. Unfortunately, however, it has inherently a fixed speed which cannot be varied. More than one fixed speed may be secured by reconnection of the windings through an external switch; and squirrel-cage motors have been developed providing for as many as four fixed speeds. The phase-wound or slip-ring motor may be operated at different speeds, depending upon the amount of resistance introduced in the secondary, but only under a fixed torque demand may the speed be accurately controlled. Moreover, operation at reduced speeds can only be secured with a low efficiency, since the reduced speed is secured only with a proportional increase in rotor loss. Speed control may be secured in an a.-c. motor if the rotor is equipped with a distributed winding and a commutator combined with brushes which may be mechanically shifted.

The inherent characteristics of d.-c. motors make them satisfactory for use where adjustable speed is required by the installation, but they have the disadvantage of requiring a transformation of power from alternating current to direct current. This disadvantage is not as great as would at first be supposed, and careful analysis should be made as to the cost of the equipment and the efficiency of transformation.

The speed of a d.-c. motor may readily be changed by modifying the field strength or changing the voltage applied to the armature. Under either method, practically constant speed is secured with varying torque demand. If d.-c. motors be used, changing the speed by changing the field is usually desirable if the motor operates as a unit independent in its speed changes from other motors. This same fixed supply of voltage may be used for a large number of motors. With d.-c. motors, it is possible to secure a wider range of speed than is feasible with the brush-shifting type of a.-c. motors. Usually the control of a d.-c. motor is simpler, more positive, and more flexible than the control of an a.-c. brush-shifting type of motor, and careful consideration should be given in the selection of adjustable-speed motors to the relative advantages of either types.

In cloth-finishing plants, it is frequently desired to operate several machines in approximate synchronism, each machine being driven by an individual motor. It is then necessary to introduce between the various units of the train or range, a compensating device to secure the approximate synchronism necessary for successful operation. The device more commonly used in the finishing plants is what is known as a "dancer-roll." This device is so familiar that it is not necessary to describe it, but it is the purpose to consider the relative advantages of voltage or field control securing the main changes in speed of the train or range. In such a group of motors, there are two classes of speed changes to be accomplished. The main change in speed is desired for the handling of different types and weights of fabrics, and this main change in speed must be common to each one of the group of motors operating in the range. A secondary speed change, individual in respect to each particular motor and necessary to keep the individual motor in synchronism with the other motors in the range, is also required. If both the main and secondary speed changes be accomplished by means of field control, the one is superimposed on the other, with results not as successful as though the two classes of speed change are separated, one secured by voltage control and the other by field control. Obvious with this advantage is the necessity for a control set supplying voltage to each group of motors which had a common main-speed change. The advantages on the other hand are the simplicity of control, the wide range of speed changes which may be secured and the unusual smoothness of operation. The method of securing the main change in speed by the use of voltage control has been known in the cloth-finishing plants of the country for many years, but until recently the advantages of this method have not been clearly recognized, whereas the advantages were found to be many.

Possibly the most accurate and most sensitive type of synchronized speed control is that used on sectionalized drive of paper machines; and here the best results are secured where voltage change is used to give the main or group speed change, and field control to give the secondary or individual speed change.

Analysis of Tuck-Stitch Patterns

Knit on Circular Spring-Needle Machines

By George L. Logan

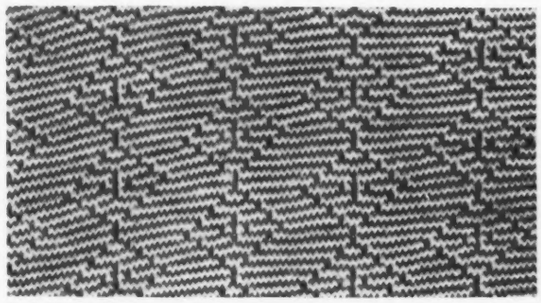
With Tompkins Bros. Co.

IN THE analysis of a knitted design there are a few fundamental principles which can be invariably adhered to. These principles involve a few simple calculations and are used in the determination of those factors which are essential for the fabrication of the desired pattern. Information as to the number of needles, the gauge, and other manufacturing data can be arrived at with comparatively few complications.

Probably the easiest method of showing the principles used is to take a sample swatch of cloth and, with no other information given, find the data from which this cloth could be manufactured. For the present we shall confine ourselves to cloth knit on a single set of needles and using tuck statches to make the pattern effect. More specifically, let us use a cylinder containing the ordinary leaded type of spring needle with cut pressers. The sample we shall take for this illustration is shown in the accompanying photograph. It is from a women's dress goods.

The first step in working from the submitted sample is to determine as nearly as possible the gauge of the machine on which the fabric was made, or the gauge of the cloth. On plain work a rule which gives a fairly accurate result is to measure the wales on one inch of the cloth as it lies in its natural state without stretching. On pattern work the cloth is looser and wider than plain cloth of the same gauge. Hence it is advisable to take the net finer gauge than the count actually shows. On this particular sample 27 wales were counted in one inch, and therefore it is safe to assume that the cloth is 28-gauge. The sample is of average stitch length and texture, which is what we wish to consider in this illustration.

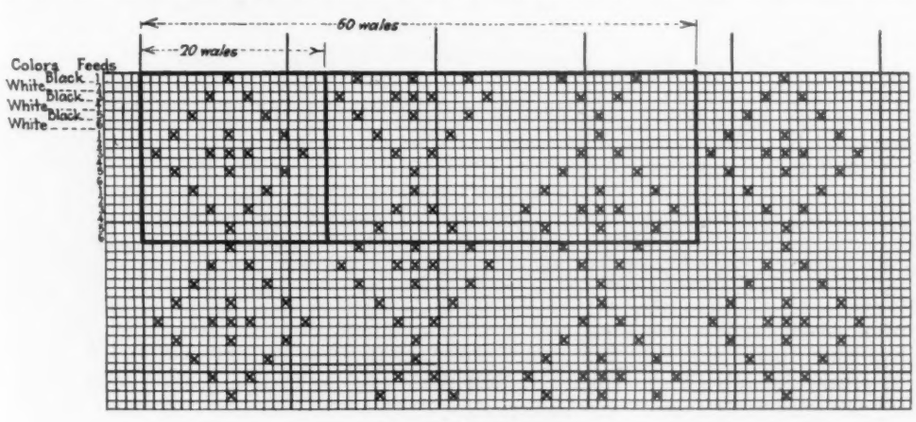
The gauge having thus been determined, the next step is to ravel enough of the sample to get at the actual combination of knitted and tucked stitches which make up the design. As the raveling of the sample takes place, each knitted or tucked stitch should be marked in its respective position on cross-section paper. The result of this is shown in one of the accompanying illustrations.



Sample swatch of knitted cloth which is subjected to analysis

The crossed blocks denote tucked stitches, while the plain blocks represent knitted stitches. In starting to ravel, any one wale may be taken as a starting point so long as that particular wale is maintained throughout the raveling operation. Probably the safest and most accurate raveling will be accomplished by concentrating on each individual stitch, laying each stitch out as it is raveled, and forgetting how the finished pattern appears to the eye. The starting wale may be marked in any convenient manner, such as by inking, statching-in a thread, or inserting a pin or needle. When the sample is of sufficient size, one repeat of both the height and width should be raveled in order that possible mistakes can be readily checked.

After the pattern has been laid out on squared paper, the next step is to determine the exact width and height of the design. It is seen from the layout that the design does not repeat itself stitch for stitch in width until the sixty-first wale. Therefore the total width of the design is 60. Likewise, the height is not repeated until the nineteenth course. The height is therefore 18.



Layout of pattern

It is also observed that there are three like pattern divisions of twenty wales each in the design, each division elevating itself upward and to the right six courses. This points to the fact that six feeds were used in producing the fabric, providing a lap of one division was used, that nearly always being the case. Two other conditions are known which aid in determining the number of feeds; viz., (1) there must be an even number of

(*Continued on page 97*)

Sound Textile Mergers Essential

By William King

To the author of the accompanying article, the various cooperative activities undertaken by the textile industry are primarily of interest as foundation work for the construction of strong mergers. He cites interesting facts regarding the Lancashire Cotton Corp., the huge mill merger in England. We feel that he over-emphasizes the effect of amalgamations in the form of direct economies, and perhaps under-emphasizes their function as stabilizing influences, and as focal points for the mobilization of creative merchandising genius. However, the points he brings out are of particular interest at this time, when mill men are thinking of the possibilities of combinations.—*Editor.*

BANKERS claim that finance is the handmaiden of industry and this is true inasmuch as the amount of liquid capital supplied is dependent upon the value of the security offered and the estimated return in interest.

However, there is a wall, wide and high, between financiers and industrialists, for each is vitally concerned with the technique of his own branch of commerce and is not familiar with that of the other to the extent of being able to define remedies for certain ills peculiar to economic conditions, even if he were invited to do so.

Perhaps the banker recognizes this principle more readily than the mill executive, since his money, which nearly always can be invested against substantial security at suitable interest rates, is the vital commodity involved, and one of the conclusions cited in the TEXTILE WORLD editorial in the issue of Oct. 4, 1930, is:

> "The industry must rely upon itself, and not upon outside interests, for the initial development of sound mergers."

This statement is in line with the general attitude of banking interests toward the problem of reconstruction in the textile industry.

Mergers, amalgamations, and rationalization in general, are not mere tools by which fresh supplies of liquid capital can be obtained—although this does not imply that these reforms can be brought into being without it—for if they were, and this point cannot be too forcibly emphasized, no useful purpose would be served. The possession of ample capital reserves is no guarantee of a first-class organization, although in industry, efficiency and capital reserves are usually so closely linked as to be inseparable, for an inefficient company's capacity for wasting capital is limitless, and is only curbed when all available assets are liquidated and the supply has ceased.

The questions which must arise from this discussion and which require answering from within the industry are:

1. How is merging to be brought about without the aid of the banks?
2. When will the industry be justified in asking for fresh supplies of liquid capital?

In an examination of the relevant circumstances one must endeavor to consider all available facts, and be concerned rather with the spirit of truthfulness than of charity, for it is only by a complete recognition of existing ills that possible remedies are deduced.

Suppose that a textile unit, either a spinning mill or one devoted to weaving, is efficient in itself, implying that its machinery is modern and in the best mechanical order, and is adequately maintained in this order; that processes are in accordance with the latest developments in technique; that the wage rates are compatible with reasonably high standards of living; that it has the minimum of labor for the work provided—it does not follow that under our recent economic order the concern can sell its production at remunerative levels and can avoid asking financial circles for an extension of credit due to losses on sales. It will obviously be in a better position than one that is deficient in any one of these accomplishments, and far superior to another which is deficient in more than one. But such profitless operation is the experience of several well-organized concerns at the present time, and illustrates that there is something fundamentally wrong with circumstances which permit such a condition.

If this concern were competing in an export market against foreign competitors who were able to sell at low levels because of peculiar local conditions, or had to climb tariff barriers to get into the country, then one could understand unremunerative trading. But if it is participating in a domestic market, the consumers of which have their standard of living protected and maintained by adequate fiscal legislation, the important competition coming from domestic concerns, one must come to the conclusion that individualistic action—the almost complete negation of cooperative policy—is largely responsible for adverse trading conditions.

The only similarity between an overwhelming number of textile units in this country is that each one must purchase its raw material in the open market at ruling price levels, and even then certain individuals possess to a greater degree than others, dependent largely upon the adaptability of the machinery, the ability to blend fibers so that the resultant cost of raw material is lower than that ruling for straight raw stock. Amalgamation of companies, instead of penalizing this individual ability, gives a better and a wider scope in which it may be used, for the success attendant on merging depends upon a centralized body employing certain men with special ability so that these may be used in a more comprehensive sphere.

On further examination each unit differs in essential

correlative functions, one of the most significant being hours of labor. Irreconcilable individuals responsible for the operation of certain units employ them for the maximum number of hours, on a day shift and a night shift, on the theory that they can sell the product, owing to reduced overhead charges, at a lower price than that of a competitor running a day shift only. As this product goes into an already saturated market, prices must fall, and a policy of this kind carried to its logical conclusion ends in production being sold at a loss.

The position is obvious to a tyro in economics, and while the banker, fully realizing this, can do nothing except restrict credit to concerns unfortunately placed, so that his money is no longer thrown down the sink, he is inclined to look askance at any scheme savoring of rationalization which is likely to need liquid capital, without any guarantee that desirable and essential economies will be effected.

And there is no doubt that his attitude is justified on the grounds of lack of cooperation within the industry. We come up against the anomaly of an industry divided into water-tight compartments, and each one seeking to function as a separate entity, under widely different productive conditions, in open competition with each other, yet each using the same kind of raw material and desiring stable prices for finished products. The most significant feature of rationalization is its absolute recognition of this fundamental principle of modern economics: that units producing the same commodity within an industry can no longer function profitably when acting in accordance with a policy of segregation, but are inextricably bound to each other, and can sell products on a profitable basis only when there are similar conditions operating within the majority of the units in regard to the cost of production.

The developments toward the ideal state of affairs must come from within, from those who have the interests of the industry at heart and who desire to see it expand by the supplying of new markets. In this respect the resolution of The Cotton-Textile Institute recommending the discontinuance, by March 1, 1931, of the night employment of women and minors is particularly to be commended, and is apparently receiving that measure of support it justifies. Much could be written on humanitarian grounds in support of this resolution. But the operation of such a measure after March 1, 1931, will not in itself right the situation, for the illness is too deep seated to be cured at once. But by achieving concerted action in an issue such as that cited above, there is substantial hope that such a body will be the nucleus around which flagging spirits may rally to discuss the advantages of amalgamation and mergers.

In the textile industry in England the appalling trading conditions justified desperate measures and after the report of the Government inquiry into the industry was published this year, the Government, through the Bank of England, formed a banking firm now known as the Industrial Development Co. But the company, exercising the prerogatives of financiers, agreed to finance such schemes as met with its approval, and these only, and there has been considerable heart-burning of late because several reorganization schemes were rejected on the grounds of not justifying the advance of capital because there was no guarantee of desirable economies.

Within the industry rationalization has been going on for some time and the Lancashire Cotton Corp. now controls nearly 10,000,000 spindles and a vast number of looms, but responsibility for the creation of the L.C.C. rests with interested banks which had been involved in the industry prior to the time when trading conditions became admittedly uncontrollable.

Additional information is available daily as to the economies consequent on merging of spinning, weaving, and merchandising sections, and at the beginning of September, this year, in a letter sent by the L.C.C. to the trade it was revealed that the combine is prepared to supply coarse yarns suitable for cheap casement cloths, shadow stripes, waterproof goods, flannelettes, khaki shirtings and prints, and will accept orders until the end of February, 1931, at the following prices:

Counts.	Pence per pound.
12s and below; mule filling	$6\frac{1}{4}$
13s to 16s; mule filling	$6\frac{1}{2}$
14s and below; mule filling	$6\frac{1}{2}$
$12\frac{1}{2}$s and below; warp on beams	$7\frac{3}{4}$

Prices are based on futures at 6 pence and adjustments will be made up and down as futures vary, the margin remaining the same. A discount of $2\frac{1}{2}\%$, 14 days is offered or 3% for cash.

As an example of the power attached to such a combination the following may be of interest. In fire insurance the L.C.C. has, by shrewd negotiations, secured a rebate of 15% on all its insurance policies in return for promising a fixed proportion of its business to specified insurance companies; this is in addition to the bulk purchase of cotton, mass production in mills, centralized control and centralized selling.

Among coarse count spinners the letter caused consternation, because it was simply impossible for those mills outside the L.C.C. to come down to the record low price levels, and they were faced with two roads: Either they might join the L.C.C. with the terms of entry dictated to them, or merge. If neither of these two courses is followed, then ultimate liquidation is inevitable. But desperate situations need forceful remedies, and when the general well-being of an industry is at stake something must be done.

If the L.C.C. requires financial aid for developing export markets and places its case before the Industrial Development Co., this aid cannot logically be refused, for the L.C.C. appears to be the rallying point for the industry, and any liquidating that will be done in the future will be done by isolated units, whose costs of production are too high.

The main principle involved in this discussion is that of maintaining a stable level of prices which are strictly competitive; that will force the weak seller to collaborate to avoid liquidation, and that will place the industry in this country in a position to enter export markets with a feeling of justifiable optimism.

Under the present system the desirable economies can not be effected, and merging is the only alternative, either sooner or later, and the sooner the better.

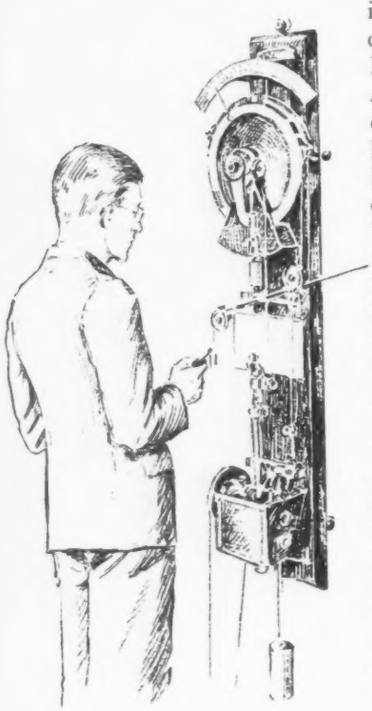
When the momentum has been gained within the industry—and the ball is rolling now—that will lead units toward amalgamation, and constructive schemes for their development have been formulated and submitted to bankers as requiring monetary aid, then the handmaiden of industry cannot logically refuse money to a movement which is supported by strong, influential units, and that exists with the object of creating stable margins of profit that will lead to a further expansion of the industry.

It rests with the mill men to bear in mind a line by Milton: "In things essential, Unity."

Tire and Fabric Committee Definitely Adopts Standards of Regain and Strength-Tester

AT THE meeting of the Standardization Committee of Tire and Fabric Manufacturers held in Boston, Mass., on Oct. 15, 1930, one of the most difficult and perplexing problems which has confronted the tire fabric industry for many years was definitely and unanimously disposed of by this committee; namely, the matter of moisture regain in tire fabrics, both woven and on cones.

The committee has covered the whole subject very thoroughly, establishing a maximum standard of 6½% for allowable moisture regain covering deliveries over a period of a year, together with a tolerance up to 7% for individual shipments. Procedure covering method of figuring the rebate for excess moisture, etc., is also covered, as is a standard method for taking samples for moisture-regain test and for determination of moisture regain present. All this work has been based on actual data obtained by various members of the committee during the past several months, including Northern and Southern mills. Anyone desiring copies of these figures may obtain them by addressing the chairman of the committee, whose membership is as follows: K. B. Cook, chairman of committee, Manville Jenckes Co.; S. A. Steere, Goodyear Tire & Rubber Co.; W. A. Karl, Firestone Tire & Rubber Co.; H. C. Hebden, B. F. Goodrich Co.; W. R. Marsden, Kelly-Springfield Tire Co.; F. Kovacs, Seiberling Rubber Co.; B. H. Foster, United States Rubber Co.; C. G. Miller, McClaren Rubber Co.; M. Castricum, Fisk Rubber Co.; R. H. Adams, Callaway Mills, Inc.; A. E. Jury, Winnsboro Mills; C. B. Finckel, J. H. Lane & Co.; L. A. Graybill, Bibb Manufacturing Co.; F. Pieraccini, Tire Fabric Corp.; and E. C. Gwaltney, Morgan Cotton Mills.



A standard method of calibrating a cord-testing machine was also adopted by the committee.

Both these new procedures represent additions to the Standard Methods of Test for Tire Cord originally adopted by the committee on June 7, 1929. Since this time, however, the methods have been enlarged considerably by the committee, and these methods in their entirety have been adopted by the American Society for Testing Materials through its Committee D-13. Copies of the complete specifications may be had by addressing the society's headquarters in Philadelphia—A.S.T.M. designation, D 179-30.

The two new additions mentioned above just adopted by the Standardization Committee are as follows:

Moisture Regain Tolerances

1. Tolerances:

(a) *Moisture regain, yearly average.* The average moisture regain determined by test shall not exceed 6½% when based on results covering a twelve-month period, said 6½% constituting a yearly average maximum standard.

Should the moisture regain over this period average in excess of 6½%, adjustment for the entire deliveries at the end of this period shall be made back to the 6½% standard basis.

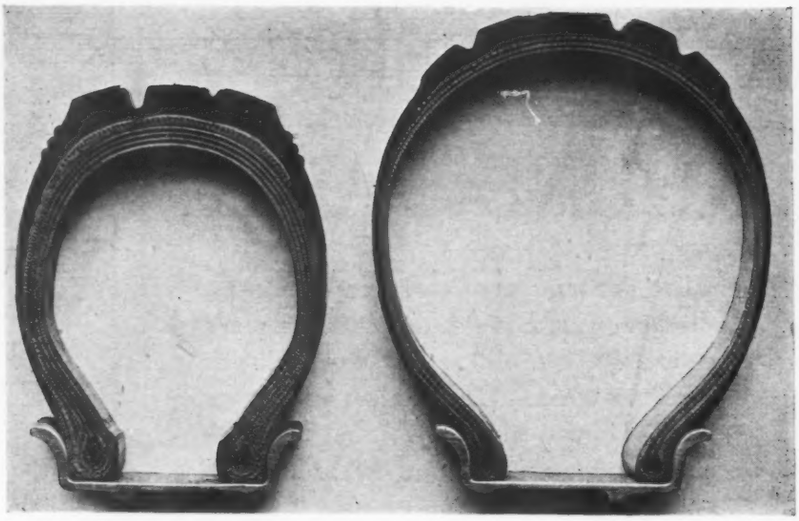
(b) *Moisture regain, individual shipments.* The average moisture regain of an individual shipment shall not exceed 7%. Any individual shipment containing more than 7% moisture regain shall immediately be adjusted back to the 6½% standard basis.

(c) *Reporting of tests.* Provision shall be made between consumer and producer for reporting of test results at the end of each month for material tested during that month, in order that each party may make whatever corrections are necessary and for the purpose of simplifying records in anticipation of any adjustment that may be made at the end of the twelve-month period. Monthly records shall be based on amounts of material invoiced during that month, rather than on amounts actually received.

(d) *Tests corrected to invoice weight.* All moisture-regain tests shall be corrected to the invoiced weight of the roll or cones from which the tests are made, and these corrected moisture-regain figures shall be the results reported and shall constitute the basis on which any adjustment may be made.

(e) *Adjustments.* Adjustment shall take into consideration the amount of material invoiced during the month with the corrected moisture regain for that month by dividing the invoice weight by 100 plus the corrected moisture regain, and multiplying the result by 1.065. The difference between this figure and the invoice weight shall represent the amount of overweight or underweight as the case may be. If the total for the twelve months shows a weight in excess of the

Standards of allowable moisture regain in tire fabrics were established by the Standardization Committee of Tire and Fabric Manufacturers.



Calibration

total invoice weight for this period, this amount shall represent the claim to be adjusted as excess moisture for the twelve-month period.

Methods of Testing

2. Methods of Testing:

(a) *Number of tests.* On woven fabrics or on cones, not less than one moisture regain test shall be made for each 6,000 lb. of material per style.

(b) *How taken.* On woven fabric, a small sample weighing approximately 20 grams shall be cut from the outside of the roll at least 12 in. in from the selvage, on the same day the fabric is received, or within 24 hours, and placed immediately in an airtight container which has been kept in a desiccator. After the roll has been run through, a similar sample shall be cut from the inside end. In the case of cord on cones, a small skein weighing approximately 20 grams shall be reeled from the outside of the cone on the same day the cord is received, or within 24 hours, and placed immediately in an airtight container which has been kept in a desiccator.

(c) *Test procedure, preferred method.* The sample of material cut as described above in Section 2-B shall be weighed immediately on a scale or balance sensitive to 0.1% of the total weight. After weighing, the sample shall be removed from the container, which is returned to the desiccator and placed in a ventilated drying oven maintained at a temperature of from 100 to 110°C. (212 to 230°F.), and dried to constant weight as determined by two consecutive weighings without removal from the oven, to be taken not less than ten minutes apart, and showing a further loss of not more than 0.1% from the previous weighing. The bone-dry sample shall then be placed again in the container and allowed to cool for a half hour in the desiccator before being weighed. The difference between the normal net weight of the sample and the dry weight, expressed as a percentage of the dry weight, shall be the moisture regain of the material.

Note: The above is the preferred method to be used in case of dispute, but any other method satisfactory to both parties giving results comparable to this preferred method may be used for routine work.

(d) *Moisture regain corrected to invoice weight.* On woven fabrics the average of the tests made from the outside and inside ends of the roll shall be the average moisture regain of the roll. In the case of cord on cones, the test made from the outside shall represent the average moisture regain of the cone.

These average moisture regain tests shall be corrected to invoice weight of the material as follows:

$$\frac{\text{Receiving weight of roll}}{\text{100 plus moisture regain}} = \text{Theoretical dry weight of roll.}$$

$$\frac{\text{Invoice weight of roll}}{\text{Dry weight of roll}} \text{ minus } 100 = \text{Per cent moisture regain corrected to invoice weight.}$$

Example: Invoice weight = 552 lb.
Receiving weight = 550 lb.
Regain on test = 6.40%

$$\frac{550}{1.064} = 516.9 \text{ theoretical dry weight.}$$

$$\frac{552}{516.9} = 1.0679.$$

1.0679 — 1.00 = .0679, or 6.79% regain corrected to invoice weight.

Calibrating Cord-Testing Machine

3. Standard method of calibrating cord-testing machine:

(a) *Zero Position.* First remove the upper jaw, upper jaw chains, cord and counterweight, and the chain which operates the recording mechanism. Then lift pawls (but do not put on brake) and allow head to come to rest. Set pointer at zero, screw tightly into place, and replace upper jaw, upper jaw chain, cord and counterweight, and the chain which operates the recording mechanism.

Again lift pawls (but do not put on brake) and allow head to come to rest. Attach sufficient weight to recording mechanism to overcome all frictional resistance with pen riding on chart. Then attach sufficiently heavy counterweight to upper jaw to bring machine at rest with pointer at zero. The machine is now properly set at the zero position and none of the above adjustments are to be changed.

(b) *Calibration.* A specially designed calibration apparatus, which may be obtained from the machine manufacturer shall be used for this purpose. The lower jaw of the testing machine is first removed and in its place is screwed a small plate or supporting stud. The lower jaw is then screwed into place in the initial calibration weight of the apparatus, which weighs exactly 6 lb., including the jaw. The machine is then thrown into gear in order that it may support this initial weight which is placed on the supporting stud. The distance between jaws shall then be set at 10 in. between nips, and a cord similar to the material about to be tested shall be inserted in the jaws in the usual manner. When the supporting stud drops far enough, the calibration weight will be suspended on the upper jaw; the pointer should then show 6 lb. and the pen should indicate 6 lb. on the chart.

Repeat this at different loads by adding additional calibration weights to the initial piece, using a new strand of cord with each calibration. Calibration weights of 2 lb. each should be provided up to a total capacity of at least 20 lb., together with a single 1-lb. weight for odd-number calibrations.

Any error shown by this check should be a progressively increasing one at from 6 to 20 lb. and should be corrected by turning the adjusting screws on the pendulum either in or out until readings at all points are correct. Any error that does not progressively increase indicates an incorrect balance between counterweights when checking at the zero position.

OVERSEERS' ROUND-TABLE

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

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Overseers and a Bonus

Editor, Overseers' Round-Table:

I AM in favor of giving the overseer a bonus if he does an operation cheaper than the amount set for this operation by the super.

Bill's argument that a man must have peace of mind does not hold water, because the overseer knows that he will receive the benefit personally if he saves something on the operation. It will give him an incentive to think and try new methods whereby he can cut the cost of production.

The bonus should be paid monthly, so that it will not be possible for him to cram all the work into one week and then hold back the next. In addition, we presume that the overseer wants to hold on to his job, and that he knows that if he does not give good work he will not hold it long.

JACOB MAUER,
Princeton Rayons, Inc.

Editor, Overseers' Round-Table:

WE FEEL that a bonus should never, under any circumstances, be paid an overseer, nor should the amount or budget for running a room be fixed. In a mill which runs one class of goods a great many things come up that cause the payroll to vary to a certain extent.

There is too much temptation to reduce quality and save costs where a bonus is given for getting the payroll under a certain amount. Quality should come first every time. If a mill gives a bonus it should be divided among all the employees and proportioned as to merits. J. L. TURNER.

Overseers and Machinery Shows

Editor, Overseers' Round-Table:

EVERY MEANS of increasing the knowledge of foremen should be encouraged. Therefore, the company should bear the expenses incurred in visiting nearby machinery exhibitions, especially since the company will be the beneficiary in the end, even though none of the exhibited machines be purchased at that time.

Seeing a machine with all attachments in actual operation gives the foreman a much better picture than the best of descriptions. It often leads to the adaptation of some idea, attachment, or equipment to present machinery with satisfactory results at minimum cost. It will also have a gratifying effect on the morale of the foreman.

The fact that a foreman sometimes gets over-enthusiastic about a certain machine matters little, for the super is always a check. A foreman who gets all discouraged because his suggestion is rejected is not the right kind and had better let someone else take his place. F. A. R.

About Wage Reductions

"YOU have probably all heard, as I have," Superintendent Chase faced the overseers, "of certain mills which have gone to their employees, when they were running part schedule due to slack times, with the proposition that if the employees would accept a wage reduction the company would assure full time operation for several months. What do you men think of the idea?"

There was silence for a few moments as the overseers turned the question over in their minds, but finally Bill spoke up. "I know that any wage reduction is a serious thing, Boss, but it is also serious to work only part time and receive only part pay. You take a mill running three days a week: The help are receiving only half their usual pay and believe me it makes things tough. Now if the company comes along and says that they can run full by cutting wages, say 10%, the workers are a darn sight better off to accept and work full time, for they will actually get in a lot more cash each week. Say what you will, what the workers need in hard times is money, and I'm all in favor of any plan which will give them more money."

"What Bill says might be all right," Pete replied, "if you considered just the present and considered one mill as entirely cut off from the rest of the world. But think of the workers in other mills. There is only so much business and if one mill runs full in dull times it only means that some other mill probably has to shut down entirely, and then the workers in that mill won't have anything at all coming in each week."

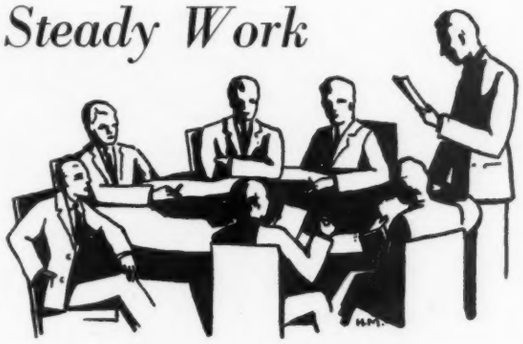
"Then there is another point," Pete continued, "and that is the fact that one mill can't get away with a wage cut without others following. I'll admit that the mill which cuts first may get the jump, but in a couple of months the work will be divided up again between the different mills and then they'll all be running short time again and the poor workers will be getting only as many day's work as they are now, and they will be paid less. It looks nice to see a full week's wages coming in, even though the rate has been cut, but in the long run its just like stirring up a hornet's nest and everyone is worse off. Then think what

On Company Cafeterias

Editor, Overseers' Round-Table:

THE QUESTION "do you think a company cafeteria is beneficial to the workers and a sound proposition?" immediately raises the question of "what company?" Such a service may be a great benefit to the workers, if not an absolute necessity, in one case and an absurdity in another.

and Steady Work



a battle there would be to get wages up again when good times come around. I guess I don't need to tell you how hard it is to raise wages, so I'm all against any plan which cuts wages even though it may help an individual mill for a month or two."

"There is no use going into a discussion," Bill came back, "about economics and all such things. The fact is that the workers in a certain mill are suffering and barely able to live. The company wants to help them out, so it figures out a way which will give the workers more money. When things are bad you've got to use emergency measures. I hate a wage cut as much as anyone, but I'd hate even more to see my friends in a mill getting close to starvation. If times are bad enough, cut out all this high talk and give the workers more money by running full. They need money and they need it today."

"You're all wrong, Bill," Pete was quite warm, "because there are times when it is better to bear things today than get in a worse mess tomorrow. You know a wage cut in one mill starts cut-throat competition and the tougher the competition between mills the rougher the sledding for the workers. This is no time to talk about wage reductions of any kind much less a selfish and short-sighted cut in one mill."

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Do *you* think it is for the good of the workers to have the mill cut wages if such a cut means full time operation for several months?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

I do not believe that it is a sound proposition, from the company's standpoint, unless there is a decided need for the service. Even though it may be of some benefit to the workers there is no activity which will be subjected to greater criticism and, if mismanaged, cause more ill feeling.

If such a service seems really necessary, the approval and, if possible, the cooperation of the workers should be secured before action is taken. Then the management of the cafeteria should be placed in the hands of someone who understands the work.

While the subject of profit or loss cannot be ignored it should be of secondary consideration. The object is to provide a certain service, not to make a direct profit.

R. Cook.

Editor, Overseers' Round-Table:

I was much impressed by the discussion of the company cafeteria and do not hesitate to say that I consider this idea one of the most progressive steps that our industrial leaders have taken in recent years.

The cafeteria, where rightly conducted, is economical, healthy and convenient. The purchasing power of the company allows the preparation of an appetizing lunch cheaply and the worker is saved the nuisance of rushing home or of eating a cold lunch at the mill. Health and efficiency are thus increased.

Even if the workers will not patronize the company cafeteria they will appreciate having a place where they can get a cup of hot coffee and pleasant surroundings while they eat. It is my opinion that any legitimate project which will make the workers have a more kindly feeling toward their employer is well worthy of consideration. Hollis E. Smith.

Editor, Overseers' Round-Table:

Experience has shown that cafeterias, for the most part, are patronized by the office and supervisory staff rather than the workers. Even the former become chronic "kickers" unless the chef is periodically replaced and new menus appear constantly.

Economically the proposition is unsound. In order to retain popularity the food must be served at, or below, cost and valuable factory space sacrificed, thus making the overhead on operating costs unduly high.

Rarely are the workers appreciative of efforts expended in this direction, nor are they cognizant of the fact that the undertaking is solely for their benefit. Unless the mill is isolated at some distance from the city the proposition should not be seriously considered, and even then only after a carefully conducted survey. H. S. D.

Editor, Overseers' Round-Table:

A cafeteria in a textile plant is a very good thing. It would make it possible for all the employees to get a warm lunch, rather than carry a cold one, and the expense would not be any greater. The company could sell the food to the employees for what it cost them.

There is no doubt but that the cafeteria would be patronized, as the employees are sure to appreciate the company's consideration of their convenience and comfort.

F. J. McNeice.

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Summary of Discussion on the Company Cafeteria

On the question of whether a company cafeteria was a sound and desirable feature, 54% of the contributions were favorable to the plan, 31% were opposed, and 15% stated that a cafeteria should be established only after a thorough study has revealed an absolute need. The principal argument in favor of the cafeteria was that it provided a warm meal at a reasonable price and thus promoted health and efficiency. Those opposing claimed that there was no department in the mill which would stir up as much criticism and hard feeling and that the cafeteria was an irritation rather than a benefit.

NEWS about MEN

WILLIAM R. WEST was elected president of the Wamsutta Mills, New Bedford, Mass., at the annual meeting of the corporation. He succeeds OLIVER PRESCOTT, who asked to be relieved of the position. Appointed to the board of directors, in addition to Mr. West and Mr. Prescott, were HORATIO HATHAWAY, JR., OTIS SEABURY COOK and CHARLES F. BROUGHTON. OTIS M. DUNHAM was re-elected clerk, with MR. BROUGHTON re-elected treasurer.

CAPTAIN ELLISON A. SMYTH, Flat Rock, N. C., president of Balfour (N. C.) Mills, Inc., has been elected vice-president of the State Trust Co., a new banking institution recently organized at Hendersonville, N. C.

JAMES G. HANES, president, Hanes Hosiery Mills Co., Winston-Salem, N. C., was elected to the board of directors of the Norfolk & Western Railway Co., at a recent meeting of the stockholders of that corporation in Philadelphia, Pa. He succeeds the late JAMES K. NORFLEET, of Winston-Salem, who was also a director of Washington Mills, with plants at Mayodan, N. C., and Fries, Va.

L. N. LITTAUER, president of the Gloversville (N. Y.) Knitting Co., is the donor of a new recreational building which has just been erected in the village of Fonda.

HENRY L. TIFFANY was re-elected president of the Kilburn Mill, New Bedford, Mass., at the corporation's annual meeting, other directors being H. C. W. MOSHER, WILLIAM F. READ, EZRA DIXON, GEORGE B. KNOWLES, and FRANK H. METCALF. MR. KNOWLES was re-elected treasurer and clerk.

WILLIAM W. WINDLE, president and treasurer of the W. W. Windle Co., Millbury, Mass., is participating in the golf tournaments at Pinehurst, N. C., where he is passing a vacation.

DR. HOMER GAGE, president of the Crompton & Knowles Loom Works, Worcester, Mass., has been appointed a member of the finance committee of the Massachusetts Unemployment Commission.

JULIUS W. CONE, Greensboro, N. C., president of the Revolution Cotton Mills, and vice-president of the Proximity Mfg. Co., and J. C. WATKINS, Greensboro, president of the Sanford (N. C.) Cotton Mills, were re-elected directors of the Atlantic & Yadkin Railroad Co., at the recent annual meeting.

T. J. YUND, president of Yund, Kennedy & Yund, Amsterdam, N. Y., has been appointed a member of a committee designated by the chamber of commerce in that city to study national water power policies.

JOSEPH W. WEBSTER was re-elected treasurer and clerk of the Grinnell Mfg. Corp., New Bedford, Mass., at the annual meeting of stockholders. Directors re-elected were ANDREW G. PIERCE, OTIS N. PIERCE, ALBERT R. PIERCE, FREDERICK D. STETSON, EDMUND H. LELAND and MR. WEBSTER.

CARL WILLIAMS, of the Federal Farm Board, will be the principal speaker at the annual banquet of the Greenville chamber of commerce, scheduled to be held Dec. 5, in Poinsett Hotel, Greenville, S. C. Mr. Williams will speak on the cotton situation and agricultural status of the South. He is also expected to describe efforts of the government to improve the condition of farmers over the country.

J. B. HARRIS, vice-president of the Greenwood (S. C.) and Ninety-Six (S. C.) Cotton Mills, has been elected president of the Greenwood Kiwanis Club.

E. M. TOWNSEND of E. M. Townsend & Co. has been named chairman of a committee of six members, representing the hosiery, underwear, knit goods, and allied trades, which has been formed in the commercial and industrial division of the New York Emergency Employment Committee. The other members are: PERCY CUTHBERT of Charles Chipman's Sons Co., Inc., JAMES JAMISON of James Jamison & Co., OWEN COOGAN of the Appalachian Knitting Mills, JOHN STERN of the *Hosiery and Underwear Review*, and MORSE STONE of Stone & Stone. This committee will assist in raising a $6,000,000 fund for wages of work to be provided for unemployed heads of families in New York for the remainder of the winter.

STUART W. CRAMER, SR., textile executive of Cramerton and Charlotte, N. C., one of the five directors of the Textile Foundation appointed by President Hoover, will attend the meeting of that board in New York City this week, at which important action may be taken relative to distributing some of the funds of the foundation for textile research work.

STANLEY MILLS, president of Mills Bros., Ltd., Hamilton, Ont., has been elected a director of Supersilk Hosiery, Ltd., of London (Ont.), Can.

WALLACE M. COX, who for more than 25 years has been in charge of designing for the Mohawk Carpet Mills, is now associated with Cox & Staedeli, at 77 Madison Ave., New York.

A. P. "GUS" EDWARDS has joined the Durham Hosiery Mills as Pacific Coast representative. Mr. Edwards has covered this territory for the last 15 years. He formerly was with Steele & Williams, Inc.

JAMES P. BERGIN, one of the owners of the Israel Putnam Mills, Inc., Wilsonville, Conn., and LILLIAN MCGUINNESS, Webster, Mass., were married in West Springfield, Mass., on Nov. 29. They will make their home in Webster, where Mr. Bergin is now town treasurer.

ROBERT T. PATE, director of John King & Son, Ltd., Glasgow, Scotland, manufacturers of shade cloth, was a recent visitor at their selling offices, Campbell, Smibert & Co., Montreal and Toronto.

The following officers were elected to the Eastern Connecticut Mills Association last week: President, SAMUEL BOYD, Quinnebaug Co., Danielson; vice-president, FRED T. TAYLOR, Powdrell & Alexander Co., Danielson; EDWARD SMITH, Wauregan (Conn.) Co.; JAMES BRADY, Hygienic Fibre Co., Versailles; LOUIS M. GINGRASS, Ashland Mfg. Co., Jewett City; and CLARENCE TAYLOR, Aldrich Bros., Moosup; secretary-treasurer, PRENTICE W. CHASE, Ashland Co., Jewett City.

PERCY COOPER, lately with the firm of Henry Collingworth & Sons, Toronto (Ont.), Can., has joined the organization of the Canadian Wool Co., Ltd.

KENNETH A. MEREDITH, formerly of Cleveland, Ohio, has arrived in Atlanta, Ga., where he will make his home in the future. Mr. Meredith and his organization have been distributing the knit products of several of the largest mills in the country for the last eight years in the southern territory as representatives of Max Lowenthal & Sons, Rochester, N. Y., Stone Knitting Mills, Cleveland, Ohio, and the Paramount Knitting Mills of Philadelphia.

At a recent meeting of the board of trustees of the Lowell Textile Institute, ROYAL P. WHITE, of Lowell, Mass., class of 1904, was elected chairman. Mr. White has served on the board for a number of years. He is president of the Brown Hosiery Co., of this city, and agent of the Stirling Mills, also of this city. He is a member of Omicron Pi fraternity.

EDWIN C. PARKER has resigned his connection with Terhune, Yereance & Wolff, wool goods, New York, to join the American Woolen Co's. organization in New York. Mr. Parker will be a styler in Department 3.

G. H. CONZE, Susquehanna Silk Mills, has been appointed chairman of the broad silk division of the Silk Association of America, Inc., by the division's executive committee. Mr. Conze filled a vacancy left by the recent resignation of PAUL C. DERBY, Duplan Silk Corp., who has been chairman of the division for the last three years.

JAMES H. PORTER, vice-president of Bibb Mfg. Co., Macon, Ga., has set up a scholarship fund amounting to more than $16,000, in memory of his father, the late OLIVER C. PORTER. The trustees of the fund are instructed to give preference to young men who are connected with the Bibb Mfg. Co. Loans are to be made out of the income of the fund, to be paid back when the recipients are on an earning basis, thus insuring its continuance. Mr. Porter's father was one of the first trustees of the Georgia School of Technology and helped to select its present site in Atlanta.

V. B. WHEATON, formerly vice-president of the Amsterdam (N. Y.) Hosiery Co., is spending the winter in the South.

GEORGE T. KEYES, who for the last four years has been in charge of merchandising

activities of the Gimbel Bros. group of stores, has been appointed vice-president and general manager of the Fruit of the Loom Mills, with headquarters at 40 Worth St., New York City.

JOHN F. TINSLEY, vice-president and general manager of the Crompton & Knowles Loom Works, Worcester, Mass., will address the industrial dinner meeting of the Y. M. C. A., of that city on Dec. 4.

GEORGE W. NORWOOD, treasurer of the Thayer Woolen Co., North Oxford, Mass., and MRS. NORWOOD are planning to pass part of the winter in California.

FRANK E. COLESWORTHY, purchasing agent for the Crompton & Knowles Loom Works, Worcester, Mass., has been appointed a member of the national committee on wood utilization by Secretary of Commerce Lamont.

RALPH H. BARUTH, sales manager of Julius Kayser & Co., has been elected a vice-president of the company and other officers were re-elected at a meeting of the board of directors last week.

LOUIS R. KERR, agent for the Fisher Mfg. Co., Fisherville, Mass., HARRY H. DAW, agent for the Wuskanut Mills, Inc., Farnumsville, Mass., JOHN T. LUND, secretary and agent for the Lund Textile Co., Fisherville and DAVID HARVEY, manager of the Linen Thread Co. of Massachusetts, North Grafton, Mass., have been appointed by the selectmen of Grafton, Mass., members of a committee to relieve the unemployment situation in that town.

C. H. CARTER, general manager of the Portland (Ore.) Woolen Mills, Inc., acted as chairman of the day at the weekly luncheon meeting of the Realty Board, Nov. 28, when the Oregon Manufacturers Association put on the program and featured 30 models displaying woolen articles made by manufacturers in the State.

CLARENCE C. SELDEN, of Los Angeles, Calif., has been appointed general manager of the California Cotton Co-operative Association, as announced by J. W. GUIBERSON, president of the new organization, with headquarters at Delano, Calif.

W. H. BAKER, general manager of the Oneida Bleachery Co., New York Mills, N. Y., will return next week from a sojourn in the West Indies.

ALFRED H. RICHARDSON, retired office manager and paymaster for the George H. Gilbert Mfg. Co., Gilbertville, Mass., and MRS. RICHARDSON, celebrated their 60th wedding anniversary at their home in that village on Nov. 21.

T. E. FITZMAURICE has been appointed general superintendent in charge of manufacturing of Allen-A Co., at Kenosha and Sheboygan, Wis., and H. CLEMENS has been appointed superintendent in charge of the full-fashioned knitting department, to fill the position left vacant by the resignation of C. SWINDELL. Mr. Fitzmaurice joined the Allen-A Co. in 1920 as superintendent of the finishing department. Previously he was associated with the Bear Brand Hosiery Co., at Waupun and Beaver Dam, Wis., where he served in an executive capacity. Mr. Clemens has been with the Allen-A Co. since 1921 and has been closely associated with the full-fashioned industry since 1900. His early experience was obtained with the Wayne Knitting Co. in Fort Wayne and Berkshire Hosiery Mills at Reading, Pa.

HARRY COOK, for 29 years associated with the Leominster (Mass.) Worsted Co., and MRS. COOK, celebrated their 50th wedding anniversary at their home in that city on Nov. 28.

C. JOHN ABBOTT, JR., superintendent for the Island Woolen Co., Baraboo, Wis., has resigned his position and with MRS. ABBOTT returned to their former home in Worcester, Mass. He has accepted a similar position with the new Coe Woolen Co., Worcester.

THOMAS J. BIERY, who during the past year had charge of cotton worsted dyeing and bleaching at the Washington Mills, Lawrence, Mass., has resigned, and the work of that department has been taken over temporarily by GEORGE ASPINALL, head dyer at the plant. It has not yet been decided whether Mr. Biery will be replaced. Before becoming associated with the American Woolen Co. about a year ago, Mr. Biery was for many years in charge of the dyeing department at the Lower Pacific Mills, Lawrence, Mass.

P. A. MULLINS, superintendent of Setz-Right Hosiery Mills, Hickory, N. C., and JEWELL MCWILLIAMS were married Nov. 28.

W. S. MOORE, superintendent of the Grier Cotton Mills, Inc., North Wilkesboro, N. C., was one of the leading speakers at the banquet given at North Wilkesboro Nov. 29 for the 110 employees of the mill, along with the officials of the mills and guests.

LAYTON CHALMERS CARD, for the last six years chief engineer for the Lancaster Mills, Clinton, Mass., until their recent closing, has accepted a similar position with the Jones division of the Arnold Print Works, Adams, Mass.

S. F. COVINGTON was recently appointed overseer of the cloth room at the Jennings Cotton Mills, Inc., at Lumberton, N. C.

ALBERT POWERS, formerly of Laurens, S. C., is now overseer of the cloth room at the Griffin (Ga.) Mills.

TROY SHERRILL has been promoted from overseer to night superintendent of the towel mills of Cannon Mills, Inc., Kannapolis, N. C. He succeeds JOE WALTON, who has been placed on the day shift as overseer.

International Newsreel.

A. E. Wullschleger of Wullschleger & Co., New York, who recently presented a jacquard woven picture of the signing of the Declaration of Independence to President Hoover. The work was done in a French silk mill.

NEWS about MILLS

Cotton

Autauga Cotton Mills, Prattville, Ala., manufacturers of export suiting, announce that the plant has resumed a five and one-half days per week schedule, following a curtailment program for a long time, during which time the plant maintained an operating schedule of four days per week.

Lincoln Mills of Alabama, Huntsville, Ala., are on a curtailed schedule, operating four days a week.

Grosvenor-Dale Co., No. Grosvenor Dale, Conn., is installing three large oil reservoirs preparatory to changing over its power equipment from coal to oil in the operation of its two mills. The contract for installing the reservoirs has been awarded to Ernest L. Wallis, Webster, Mass., and for installing the system to the National Airoil Burning Co., Philadelphia.

Strickland Cotton Mills, Valdosta, Ga., recently sold their entire output up to next March, and as a result have doubled their working force, operating on a 24-hour schedule. Julian Strickland, secretary-manager announced that officials of the company are considering enlarging present quarters.

***Lancaster Mills,** Clinton, Mass., in liquidation, offer their entire real estate holdings, assessed for $4,000,000, at public auction on Dec. 10 at 11 a.m., on the premises. They will be sold in 19 separate parcels and include the Amory mill, the weaving, dyeing and finishing group, power plant, storage warehouse, Cameron mill, Lancaster Mills Inn, a two-family house, and also the right to use up to 24,000,000 gallons of water a week from the Nashua River below the Wachusett Reservoir, owned by the state, for manufacturing and domestic purposes. The property will be open for inspection every business day before the sale. Samuel T. Freeman & Co., Boston and Philadelphia, are in charge of the sale.

Tombigbee Cotton Mills, Columbus, Miss., including a four-story building and 29 houses, have been purchased by H. H. Holcombe, president and treasurer of Holcombe Textile Equipment Co., and W. D. Dobbins, both of Birmingham, Ala. It is stated that the mill will be placed in operation shortly, on heavy sheeting and novelty cloth.

Jackson Mill of the **Nashua (N. H.) Mfg. Co.** resumed a full-time schedule of operations Nov. 17. An agreement with employees provides a wage reduction and a guarantee on the part of the company for six days a week steady employment until May 1. The working force will be increased from 200 to 600.

Walcott & Campbell Spinning Co., New York Mills, N. Y., has sold its idle mill building to Paul Buck and E. A. Panta and it is expected to house a new industry.

Linford Mills, Inc., Belmont, N. C., have had their oil spraying system revamped, with new and improved high pressure unit supplied by Borne Scrymser Co., New York City. The new installation is of the hopper high pressure-spraying type for fine yarn spinning.

Gem Yarn Mills, Cornelius, N. C., are now operating on a full-time day and night schedule.

Character Products Co., Inc., Salisbury, N. C., has been granted a charter by the secretary of state of North Carolina to engage in the manufacture and sale of cloth and other merchandise. The concern has an authorized capital stock of $100,000, $13,000 of which has been paid in. The following are the incorporators: H. A. Ruetzer, Sallie H. Grimes and Charles H. Deal.

Wilbur Cotton Mills, Inc., Troy, N. C., are continuing production on a full day and night schedule, with full working quota, and will hold to this basis for an indefinite period.

Wadesboro (N. C.) Cotton Mills Co., after operating on a curtailed schedule for some time, has been put on a full-time schedule.

Collins & Aikman Corp., Philadelphia, Pa. Mill A of this company was damaged by fire, Nov. 22. An official estimate of loss has not been announced. The damage will be replaced.

Mt. Hope Mills, Inc., Warren, R. I., have resumed operations on a 48-hour schedule with a 5% wage reduction. The 150 operators have agreed to accept the terms temporarily.

Judson Mills, Greenville, S. C., are installing 400 new Crompton & Knowles looms, replacing looms which are to be junked. The installation of the new equipment will take about three months to complete. Judson Mills have 2,258 looms, all of which are engaged in making fine goods. No expansion of the company's operations is planned.

Newberry (S. C.) Cotton Mills have gone on five-day-a-week schedule. This plant, which manufactures sheeting, had been operating four days a week up to Nov. 26, when the operating schedule was increased.

Chicopee Mfg. Co., of Canada, Ltd., has been incorporated to carry on the manufacture and sale of cotton and cotton fabrics throughout Canada. The head office will be in Montreal.

**Indicates previous mention of project.*

Wool

Selden Worsted Mills and the **International Worsted Mills,** Methuen, Mass., have merged their interests and operations of the two companies will be centered at the Selden mills. Capacity schedules are planned and a working force of 500. Both companies are manufacturers of men's worsteds. James K. Selden will continue as president and treasurer and Frank G. Murch, owner of the International mills will be an executive.

Warrensburg (N. Y.) Woolen Co., Inc., is operating its trousers department at near capacity with prospects of resuming in the other divisions soon.

Pendleton (Ore.) Woolen Mills are running at normal or better in every one of their plants, and in some cases branch plants have been putting in overtime work to keep up with orders, according to C. M. Bishop, head of the company.

J. Wallworth's Sons, Inc., Upland, Pa., have been organized with a capital of $100,000, to take over and succeed to **J. Wallworth's Sons,** with local shoddy and waste mill. The new company is headed by Charles Wallworth, who has been elected treasurer; Charles G. and Foster T. Wallworth.

Lymansville (R. I.) Co., worsted cheviots, serges and worsted yarns, reopened its plant on Dec. 1, after a three weeks' shutdown, giving work to 200 employees, with the probability that the number will be doubled within the next few weeks.

Rockwood Mills, Ltd., which recently took over the plant and equipment of Harris & Co., Ltd., at Rockwood, near Guelph (Ont.), Can., have completed organization with A. E. Lyon, Brantford, as president; James Coleman, Brantford, vice-president; and directors C. S. Garner, D. L. Adams, Brantford, and D. N. Panabaker, Hespeler.

Newlands & Co., Ltd., Galt (Ont.) Can., have entered upon a program of expansion which includes a new building and an additional plant for worsted spinning.

Carlton Place (Ont.) Can. Geo. Hirst & Sons, Ltd., Batley, England, have completed the renovation of the old Hawthorne woolen mill property and are now setting up the machinery. The equipment which recently arrived from the **Brier Mills** of the company in Yorkshire, includes 6 sets of 72-in. cards, 77 looms and spinning and finishing machinery. The company will employ 250 workers when it begins operations early in 1931.

***Huntingdon (Que., Can.), Hiram Leach & Son (Canada), Ltd.,** who started operations here in September will expand their worsted cloth mill early in 1931. They now have a large number of looms in operation and intend to start a worsted spinning and woolen mill in the spring.

Rockwood (Ont., Can.), Mills, Ltd., which recently took over the mill and equipment of Harris & Co., Ltd., of Rockwood, are already under production. Gray blankets and plaid motor rugs of a high grade are now being made, and it is the intention of the management to enter in the near future into the manufacture of a wide range of tweeds.

Knit

Archer Hosiery Mills, Columbus, Ga., have announced plans for an addition to their plant, which will be one story, 105 x107 ft., and designed to accommodate full-fashioned hosiery machines. It was stated that 24 Reading 45-gauge machines will be installed at intervals of sufficient length to permit training of new operatives. Lockwood Greene Engineers, Inc., Spartanburg, S. C., engineers in charge, have awarded contract to A. K. Adams & Co., of Atlanta.

Bailey Knitting Mills, Fort Plain, N. Y., have sold property to the Co-operative Service Corp., according to deed filed with the county.

Gotham Silk Hosiery Co. S. E. Summerfield, president, announced that the company's plants in New Jersey and Pennsylvania would be closed for a period of 30 days—from Dec. 6 to Jan. 5—with the aim of reducing overproduction which at present is a vital question in the hosiery industry.

***Bossong Hosiery Mills, Inc.,** Asheboro, N. C., have nearly completed the new addition to their plant, which is 64x140 ft., of modern mill type. As soon as this is ready for operation, 100 additional employees will be needed and the plant will produce 5,500 dozen pairs of hosiery per month, which will double the present capacity of the plant. At present there are 115 employees and the present floor space is 28,000 sq.ft. Charles G. Bossong is president of this company.

Golden Belt Mfg. Co., Durham, N. C., has just completed a small addition to its full-fashioned hosiery plant to accommodate its laboratory equipment. An additional dyeing machine, manufactured by Smith Drum & Co., Philadelphia, Pa., has been installed in the dye house.

Great American Knitting Mills, Inc., Bally, Pa., hosiery manufacturers, have started operating their plant with a complete double shift to take care of the many orders they have on hand.

Day-Smith, Ltd., Hespeler (Ont.), Can., have been incorporated under Dominion charter with an authorized capital of $100,000. This new knitting concern has purchased the equipment of the **Renier Mills** at Wellesly, Ont., and it has been moved to Hespeler. The plant is in charge of Ira Smith, formerly with Dominion Woolen & Worsteds, Ltd., and A. C. Day, formerly sales manager of the same company.

Silk

Schwarzenbach-Huber Co., Decatur, Ala., announces that its plant is operating on full 24-hour schedule.

Cheney Bros., South Manchester, Conn., have started normal schedules in the broad silk department with assurance of continuation for at least two months. The spun silk division has resumed two-thirds capacity operations which should continue for six weeks, according to present business.

Stamford (Conn.) Silk Weaving Co. has incorporated with a capital of $50,000. The incorporators are: James J. Soltas, Stamford; Hattie Spalding, Stamford; and C. E. Blackman, 1035 Noble Ave., Bridgeport.

National Spun Silk Co., Inc., New Bedford, Mass., is increasing operations at its plant as a result of better conditions in the demand for spun silk.

***Blue Bird Silk Mfg. Co.,** Paterson, N. J., has purchased the mill once operated by the **Reliable Silk Mfg. Co.,** 12th and Manor Sts., Columbia, Pa., and is equipping it for the production of necktie silk. Jacquard and shaft loom workers are being employed. Morris J. Klein, who was connected with the Reliable Silk Mfg. Co., will be superintendent for the Blue Bird company. Operations will be started with a working quota of about 225 employees.

American Silk Mills, Inc., New York, will open a new plant on Franklin St., Lancaster, Pa., very shortly, giving employment to 200 hands. The same company already has a plant in operation at Fountain Ave. and New Holland Pike, Lancaster. The company will occupy the building formerly occupied by the Johnson Silk Co. At the same time it was announced that Charles R. Batzer, superintendent of the Lancaster mill for three years, has been made general superintendent of the company's plants, succeeding Milton H. Rubin, who takes over other important duties.

Merrill Silk Co., Inc., Hornell, N. Y., has received a contract from J. C. Penney Co., to furnish approximately 50 different textile articles for sale in 1,455 stores of the latter concern. As soon as production gets under way, the Merrill Silk Co. plans to expand its facilities. Preliminary plans provide for erection of additional manufacturing unit and installation of a considerable quantity of new machinery and equipment.

Utica, N. Y. The newly organized **Oneida Silk Co., Inc.,** will begin operations within the next three weeks in the plant formerly operated by the **Utica Silk Co.,** at 1112 South St. The company will manufacture broad silks. The firm is headed by Felix Chardon, president; Joseph J. Cardamone, vice-president and treasurer and Henry T. Dorrance, secretary. The new concern is capitalized at 300 shares of common stock of no par value. About 50 operatives will be employed at the start. The South St. plant has been idle for the last year, or since the Utica Silk Co. ceased to function there.

Champlain Silk Mills, Whitehall, N. Y., is again running with night shift and greatly enlarged working force.

Kutztown, Pa. The local silk mill, formerly owned by the **Amalgamated Silk Corp.,** has been sold. Negotiations for the sale of the plant were completed in New York City. The new owner is Mitchell McNeal, of Windler, Pa. George F. Robbins, well-known Allentown textile man, will be in charge of the local plant, according to an announcement made.

Grout's Limited, St. Catherines (Ont.) Can., has awarded contract to Wilde & Brydon, Ltd., Toronto, for erection of addition to plant on Welland Ave., one story, 200x30 ft., steel frame construction with gypsum roofing and mastic flooring.

Rayon

Viscose Co. of America, Inc., Marcus Hook, Pa., has work nearing completion on second unit of mill at Parkersburg, W. Va., and plans early installation of machinery and equipment. The new structure is about 20% larger than unit No. 1, now in service, and will give employment to a considerably increased number of operatives.

***Courtaulds (Canada), Ltd.,** Cornwall, Ont., Can., are planning to complete their new mill unit now in course of construction by next June or July, when it will be placed in service with an additional quota of over 300 operatives. The new addition will be 150x450 ft., and has been designed to develop about 30% increase in capacity.

Finishing

***Newark, N. J.** A sale of the remaining plants of the **Fabrics Finishing Corp.,** under the direction of the Federal Court, will be conducted by the receivers of the business on the steps of the Passaic County Court House at Paterson on Dec. 22 at 12 o'clock, noon. The four plants to be sold are located at 17 Johnson Place, West New York; 777 River St., Paterson; Maple and Wagaraw Road, Fairlawn; and 18 Market St., Paterson. All of the plants will be offered free and clear.

Hellwig Silk Dyeing Co., Philadelphia, Pa. The most recent step in the more than half century history of this concern has been marked by the installation of complete equipment for silk printing. This is in addition to their enlarged equipment for weighting and dyeing of piece goods. They have also recently completed a four-story addition to their plant which is of slow burning construction, adjoining their mill at Wissinoming. It contains more than 50,000 sq.ft. of floor space. Their main offices are at the 9th & Buttonwood Sts. plant; the Wissinoming plant is at Delaware River & Comly St. Jacob Knup is president.

Miscellaneous

Bast Fibers, Inc., recently chartered under Delaware laws, is securing the confirmation of the Superior Court for a lease of the mill of the **United States Worsted Corp.,** North Chelmsford, Mass., now in receivership. The lease includes the former wool-scouring unit of the company, with all machinery and equipment, and will be used for a new plant by the leasing company. An option to buy the property for $41,000 has also been granted. The company is said to be working on a wool substitute.

Questions and Answers

We undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to TEXTILE WORLD. We do not undertake, however, routine analysis of yarn or fabric, or investigation involving unusual expense.

Inquiries should give the fullest information and data possible. In the case of damage to material, a sample should be sent. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as evidence of good faith.

Letters expressing opinions or voicing criticism are cordially invited. These will be signed by the correspondent's name unless the letter itself contains a request that the name be withheld.

—EDITOR.

Spinning Rayon on Bradford Worsted System

Technical Editor:

We are spinners of rayon on the Bradford system for worsted yarns. In the September 27 issue of TEXTILE WORLD *there is an article on rayon waste in the worsted industries. In this article it mentions putting emulsion on at the gill boxes with a bristle spray brush instead of the pan and roller. We should like to know just what this consists of and how it might be made.*

Also, our yarns are too wild or hairy for certain purposes. We do not get any emulsion on at the gill boxes, also do not have any humidifiers in the mill. We should appreciate it if you could help us out with some suggestion or information. (7398)

The best method of applying emulsion at the gill box on rayon work is one which will not allow large drops to fall on the stock. Large drops entail a great risk of producing cut work, due both to the pressure in the front rolls and to the greatly lowered tensile strength of rayon when wet.

Devices for reducing the size of these drops, or producing a fine spray, can be made in the machine shop of the mill. Make a shafted wooden cylinder covered with regular straight-toothed fancy card clothing. This will act as the bristle brush. Fit this into a square metal pan of proper depth. Drive the cylinder from a small grooved pulley on the end of the brush shaft by means of a round belt. Adjust a steel strip or knife to contact with the wires of the fancy clothing, so that as the brush revolves in the pan, the fine particles of the emulsion will be carried by the wires to the knife and sprayed onto the stock by the spring action of the wires as they straighten out after contact with the knife. A device might also be produced very easily on the well-known atomizer principle, if a supply of compressed air is at hand.

Great care should be taken not to use too much emulsion; and after the proper amount is reached, it will be necessary to reset the twist in the drawing boxes—otherwise much difficulty will be experienced in further handling the yarn.

To reduce the wild or hairy appearance of the yarn, which makes it unfit for certain uses, the most important thing is to reduce the spindle speed, especially in the spinning. You do not state your range of counts, nor whether cap or flyer spinning is used. For the lower counts, say up to 12s, especially if a smooth yarn is wanted, flyer spinning is better. A frame may, of course, be changed over from cap to flyer, or *vice versa*. Above 12s, cap spinning is suitable for most work, but to produce a smoother yarn the spindle speed must be cut. Of course this increases the cost of spinning. Another thing it might pay to look into in regard to the question of smoothness is good separators, but of course they will not make up for excess spindle speed. Humidifiers are a help in producing smoother yarn, but the method of spinning and the spindle speed are more important.

◆

Manufacture and Finishing of Knitted Astrachan

Technical Editor:

I am enclosing two small pieces of astrachan cloth, one all wool and the other with cotton back. Will you kindly advise me as to the yarns required for each, the method by which each can be knitted, and the proper finishing process? (7367)

An examination of the part-cotton astrachan shows two ends of the 15s cotton at each feed for the backing yarns. Every other feed has one end of about 6s cotton for a face yarn. The other feeds have a twist of wool and cotton equivalent to about ½s cotton. We estimate the cotton of this ply to be about 1s.

The all-wool astrachan is so highly felted that we cannot determine the counts used. This type of fabric is generally knit on the loop-wheel, spring-needle machines with a special feed which any of the large knitting-machinery manufacturers can supply. The manufacturers can doubtlessly supply details for fabrics similar to both of these.

Astrachan properly constructed with the proper yarns leaves but little to do as far as finishing is concerned. The best astrachan is usually scoured only. However, developing the loop and having it stand erect is governed largely by the method used in scouring.

Make up the bath in the washer with sufficient solution to have the goods swimming around; that is, add the water, soap, and alkali before entering the goods. A temperature of about 100° F. will suffice. Enter the astrachans against the loop, so that, while they are running in the washer, the liquor and rotary motion of the machine will have a tendency to raise the loop instead of lay it, as the result would be if the loops were run in the direction in which they lie when knitted. A treatment of 30 to 40 min. in this bath will scour the fabric sufficiently. Next, wash the goods in warm water for about 30 to 45 min.

Dyeing is carried out in the usual manner. Care must be taken not to boil so long as to mat the face and bruise the loops. Failure to take this precaution will result in narrow goods, and over-stretching in width will spoil the character of the fabric.

When the goods have been extracted and are ready for cutting, drying is the next process, although many mills have

what they term a plush batting or whipping machine. The goods are run on this machine face up, the back being thoroughly beaten so as to raise the loop before drying. This process is no doubt of some advantage if the loop is not quite erect, as drying the loop in an upright position will cause it to remain so. Examine the fabric for large knots and other defects; then give a good steam brushing. Shearing must be done with care, so as to avoid cutting the loops; yet a clean fabric must be obtained. Tentering is the final process, and the goods should be steamed well to raise the loop while going over the frame. The goods should be rolled up against the loops before shipping.

◆

Wool-Card Fancy Becomes Wrapped With Stock

Technical Editor:

We have a fancy No. 28 with straight wire (no knee) on first breaker on finisher. The fancy becomes wrapped up with stock. I have slowed the fancy down and have ground it, but it still wraps on any stock. The worst trouble occurs when we are running a nub mix. Can you help me? (7411)

The fancy wire should be about two numbers coarser than the wire on the main cylinder, to give satisfactory results under various carding conditions. See that your drive pulley has a leather log on its face; also that the drive belt is not slipping on the large drive pulley on the rim of the main cylinder. This should be leather logged; often it is not, especially on the older makes of cards. This is a point that should be given careful attention, as it often happens that a slipping drive belt on the fancy is the cause of the trouble mentioned.

Be sure the fancy roll is true and not out of balance. Smooth the points by turning slowly and holding a fine emery board against them with considerable pressure. Rub lengthwise to the right and left on the fancy wire. Be careful not to set the fancy on too hard, and wind the roll with a very light tension. Some carders run a small clearer roll set just close enough to keep the points of the fancy teeth clean. This has overcome the trouble of stock winding when other remedies have failed.

◆

Removing Transfers From Hosiery

Technical Editor:

Kindly give us information as to whether or not any preparations can be added to a dyebath which will, in the dyeing process, remove transfers when redyeing goods. Our thought in mind is to avoid the hand labor in removing these transfers, if it is possible to do so. (7379)

We believe this question will be most satisfactorily handled by referring it to your source of supply for transfers. Transfers come in two types—fugitive and permanent. We believe that most transfers employed in trade-marking hosiery are of the fugitive type, although at the same time they are fairly fast to washing and cannot be easily removed. Accordingly, transfer manufacturers also produce solvents for the removal of transfers, both fugitive and permanent; and it is logical to conclude that it is safest to apply to the manufacturer of transfers for information regarding their removal.

THOUSANDS of inquiries are handled annually by the Technical Editors. In order that as many readers as possible may benefit from this service, we select problems of general interest for publication each week.

It has been our experience that as a rule transfers are satisfactorily removed by the regular process of degumming; that is, to employ the same soaps and oils in about the same quantities for stripping transfers that are used for degumming hosiery. This, of course, applies to silk hosiery. We also find that transfers are removed to a satisfactory degree by redyeing the goods black. However, we do not know of any preparation that can be added to a dyebath for the sole purpose of removing transfers.

◆

Finishing Cotton Tablecloth

Technical Editor:

I am enclosing a sample of a tablecloth and shall appreciate it if you will let me know how this finish can be obtained and what machines will be necessary. On my American trip two years ago, I was told that a manufacturer of cotton tablecloths and other household goods had discovered a method of finishing cotton goods to avoid the fluffing of these goods after the laundry. As I am very much interested in this method, I shall be obliged if you will procure for us the address of this manufacturer. (7378)

The class of merchandise as shown by the sample can be bleached and mercerized in the regular manner after a close singe. From the bleach house, the goods are opened over a regulation scutcher, four- or five-roll water mangle, starched in range through a two-roll starch mangle, and dried over regular drying cylinders.

The question of allowance between gray and finished widths would determine whether the goods should be tenter framed over a long tenter or simply passed over the 30 to 40-ft. tenter for the production of a fixed width. A great many American concerns finish these goods over ranges consisting of a small number of drying cylinders and 90-ft. tenter with hot-air drying system. After tentering, the goods are allowed to lie for several hours to recondition. They are then passed over a sprinkler and either calendered over a seven-roll calender, or through a hydraulic schreiner calender, depending upon the finished appearance required.

We are enclosing a list of manufacturers of machinery for this line of work. With reference to the lint-proof or fluff-proof finish we understand that this finish is being produced chiefly by one American company whose name we are also enclos-

ing. We are not definitely sure of the exact chemical formula, but we understand that the goods, after bleaching and drying, are dressed with a viscose solution.

◆

Filling Does Not Boil Out

Technical Editor:

I am enclosing a sample of silk crepe. My customer has complained that one twist in the filling does not boil out. Will you please examine this and let me have your opinion as to the fault in this piece of goods? (7369)

We have examined the twist in the thread which fails to boil out, and have had considerable difficulty in unraveling this twist. The twist is very irregular, varying from 32 to 44 turns per inch. We have also put this thread under a magnifying glass and can find traces of the tint. In our opinion the dyestuff used in the tinting process was not suitable for that purpose.

We are returning a piece of this silk which has been given an ordinary boil off. This operation has failed to make the dyestuff penetrate this thread. We believe, however, a more prolonged boil off would be injurious.

◆

Holes in Bleached Rayon Underwear Fabric

Technical Editor:

The enclosed piece of cloth was returned to me, and I am sending it on to get your opinion regarding the defect. The fabric is supposed to have been laundered twice. Our process of bleaching on this fabric is as follows: Bleach with cold hypochlorite and rinse well before and after souring with sulfuric acid. (7373)

The most common cause of holes in bleached rayon underwear fabric is improper or rough laundering. If rayon underwear goes out of the mill in perfect condition and is sent back by the customer after only a few washings, it indicates, in the majority of cases, improper treatment in washing.

We suggest, however, that for souring after bleaching, you use a different anti-chlor from sulfuric acid. This acid is difficult to wash out and, if left in the goods, exerts a weakening effect when the fabric is dried. A good anti-chlor which produces only water-soluble salts in its reaction is hyposulfite of soda—commonly called "Hypo"—which can be purchased in crystal form from any large chemical concern. This is dissolved in a barrel or other suitable container and used as a stock solution. The sample showed traces of acid, but it was not determined whether this was sulfuric acid or oxalic acid, which is sometimes employed as a sour by commercial laundries.

◆

Difference in Shade in Full-Fashioned Stockings

Technical Editor:

We are enclosing herewith two stockings, made from four-thread Japan 13/15 denier, having five turns of twist per inch.

You will note that, in both of these stockings, there is a different shade where the foot has been topped onto the leg. You will note the same change takes place in one of these stockings about at the narrowing in the leg. Upon looking over several of these stockings, we find that the courses are approximately the same in the dark places in the stockings as in the light places, the differences being only one or two courses per inch. This leads us to feel it is not machinery trouble. Further, on account of using only one supplier's silk, we do not think it is mixed silk and, of course, we must eliminate the dyer, because it is quite plain it is not his trouble.

If possible, we shall thank you to give us your opinion as to whether the twist in the yarn in the dark part of the stocking is the same as in the light part. We hardly think it is possible for you to tell us whether the color of the raw silk was the same; but any information you can give us that will help us to clear up this particular trouble will be greatly appreciated. (7360)

We find this trouble more or less prevalent with all mills this season on account of the darker brown shades, which show up this defect much more than the light spring shades. It can be traced to several causes. We shall mention those most common.

A variation in the fabric or courses per inch will cause different light reflections. This is the most common cause of the mismatching between the foot and leg. This is not always due to the set-up of the machines, since the size of the silk could produce the same effect. Silk of light denierage will knit less courses per inch than the correct or heavier denierage. In many instances, if the silk on either side of the line between the dark and light shade is split up, the analysis will reveal a variation of several cocoon ends in the total number of ends in the two silks.

We believe the principal cause of this trouble is different lots of silk having different affinities for dyes. These are often mixed by the throwster in clearing his machine or in elsewhere failing to keep each lot entirely separate. As the last spools from one lot on the twister begin to run off, extra spools from the succeeding lot are added. This mixing could also be done on the winders by the throwster, on the back winders in the mill, or on the knitting machine.

We believe the trouble with the samples submitted is due to mixed lots of silk. This is suggested by the presence of a knot at the line where the color changes.

◆

Dyed Stock Not Fast to Fulling

Technical Editor:

In the Questions and Answers Department in your issue of Nov. 8, I noted inquiry No. 7323 on the subject of dyed stock not being fast to fulling. I suggest that the inquirer try mordanting with 3% of chrome and 2½% of half-refined tartar. Boil at a gentle simmer for 1 hour; then rinse thoroughly through not less than three waters to remove entirely the free chromic acid.

In a separate tub, put in 10% of a good Hematine (sometimes 8% will answer). Boil at a gentle simmer for 1 hour, add 2% of acetic acid (well diluted), boil for ¼ hour, rinse, extract, and dry at a moderate temperature. Have plenty of room in the dye tubs, so that the wool may be moved easily and freely—never poled, as that has a tendency to felt the wool. This method will leave the wool soft and kindly, while the formula given in your original answer has a tendency to harshen the stock. I am of the opinion that a poor grade of Hematine is being used, since with a good crystal 8 to 10% is plenty. More than that overloads the stock and makes it bleed.

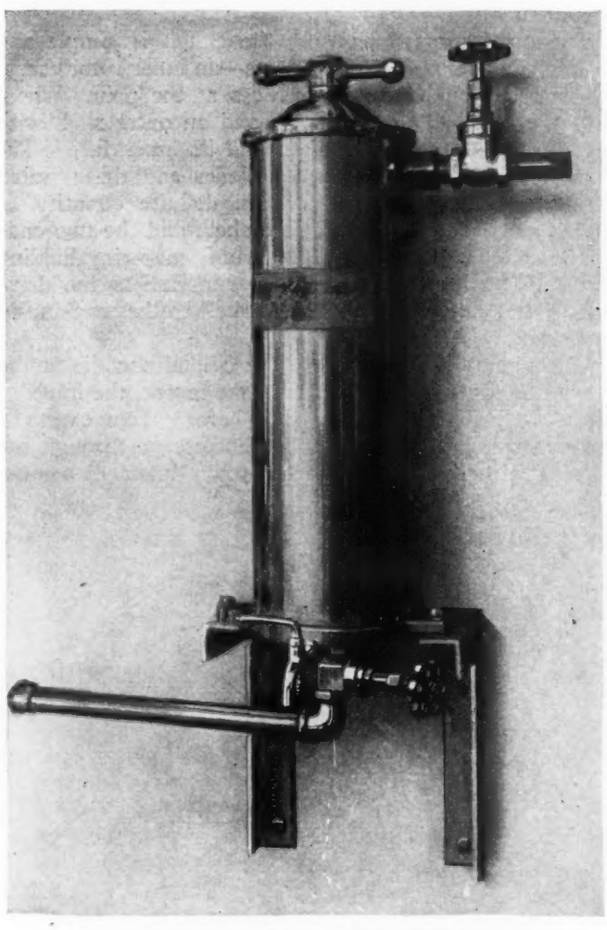
OLD DYER.

New Machinery & Processes

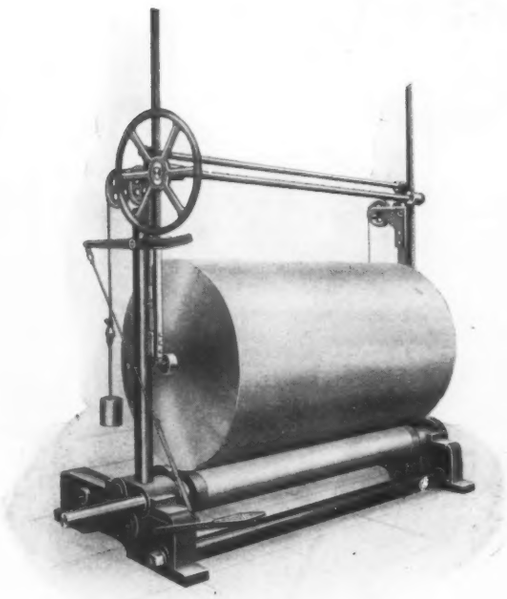
Water Filter

DEVELOPMENT of the Hi-Speed water filter has been announced recently by Alsop Engineering Corp., 39 West 60th St., New York. This new filter may be connected to any pipe line, and is designed to deliver a large quantity of filtered water without clogging. Use of heavy filter paper as a filtering medium makes it possible to clean the filter in two minutes, simply by removing a screen on which are wrapped two layers of the paper and rewrapping it with fresh filter paper. If greater capacity is desired than can be secured with one unit, two (or more) filters can be connected in parallel, in which case one filter can be cleaned while the other is still operating.

The filter has 400 sq.in. of filtering area, giving a capacity of 15 gal. per min. at 25 lb. pressure, and is designed to withstand pressures up to 100 lb. per sq.in. Pipe connections are $\frac{3}{4}$ in. All parts are of brass or bronze, finished in highly polished nickel; chromium-plated units can be supplied if desired.



High-speed filter of unique design



Rolling-up machine for plain or coated fabrics

Rolling-Up Machine

FOR winding plain and coated goods, Cameron Machine Co., 61 Poplar St., Brooklyn, N. Y., has introduced recently a low-model rolling-up machine. This equipment, designated as Camachine 44W, is suitable for winding fabrics of wool, cotton, rayon, and silk, as well as rubber, artificial leather, and similar products. Standard machines are available in widths from 32 to 92 in. In widths not exceeding 62 in., it is possible to rewind a roll to a maximum diameter of 48 in. In widths between 62 and 82 in., the maximum diameter of rewound roll obtainable is 36 in. The machine runs at a fabric speed of 400 ft. per min.

Steel-Spring Recording Gages

RECORDING GAGES with an alloy-steel, helical spring movement have been announced recently by the Foxboro Co., Foxboro, Mass. This new gage movement is of one-piece tubing—all-steel, and all-welded. It is said to combine maximum safety with high resistance to commonly encountered corrosive agents. There is no solder or brass used in the construction of the movement.

The gages are designed to withstand high temperatures and pressures, with the result that there is no danger of them letting go, to spray hot fluids on workmen nearby. Besides the safety feature, the gages allow uninterrupted service, since they are durable under trying conditions.

The new gages are expected to find wide application on high-pressure work in central stations, casing and tubing work in the natural-gas field, cracking units in refineries, various processes in air-reduction plants, and on processes and in power plants in numerous other in-

Alloy-steel helical movement for recording gage

dustries. The Foxboro Co. has found that after continuous operation in the field the steel helicals are accurate to within less than 1%.

The alloy-steel movements may be specified with all new Foxboro recording gages, or may be ordered separately to be installed in old Foxboro gages now in operation. The new movements are used on gas, water, steam, oil, air, brine, chemicals, etc., where the pressures do not exceed 2,000 lb. per sq.in.

Rubber-Spiked Distributor Belts for Cotton Gins

RUBBER-SPIKED distributor belts of improved design for cotton gins have been developed recently by the Diamond Rubber Co., Akron, Ohio, a subsidiary of the B. F. Goodrich Co. It is stated that with this new belt all grades of cotton can be handled, including wet boll cotton in bad ginning condition. In addition, the rubber spikes do not break or become detached from the belt; and should an accident happen, the spikes cannot damage the gin saws or produce any spark to cause a fire loss.

The flexible rubber spikes are made in units of five and six, which are mounted on hard rubber bars and bolted to the belt with special clamps. The belt is made with four plies of high-grade belt fabric and rubber. Heads of the bolts and flat washers are countersunk, so as to be flat with the belt surface and thus eliminate the necessity of special grooves in pulleys. Bolts are passed through the washer, belt, spike bar, and a metal clamp; and the split ends of the bolts are spread with a chisel, which permanently attaches the unit.

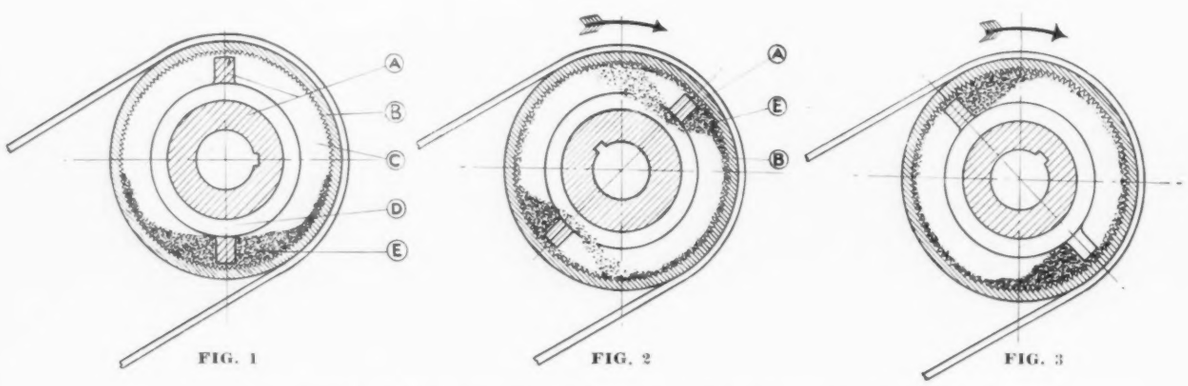
Clutch for Heavy Loads

FOR applications involving heavy loads a new line of clutches has been placed on the market by the Hill Clutch Machine & Foundry Co., 6400 Breakwater Ave., Cleveland, Ohio. These clutches are entirely automatic, both in pick-up and in release, and thus keep the load on the motor, gasoline engine, or other driving unit within adjustable predetermined limits.

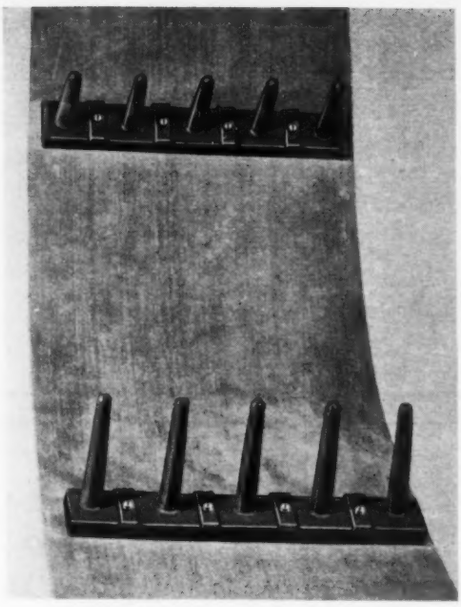
Because of these features, the clutches are particularly recommended for direct-connected or belt drives operated by electric motors. It is stated that not only can the regular type of motors be used instead of the more costly slip-ring or high-torque types, but also in many cases a decidedly smaller motor and less expensive switchgear are required. In belt drives, the saving through the use of lighter belting is said to be an important item.

The operating principle of the clutch is simple and unique. There are two main parts—an inner rotor carrying impeller blades having orifices at the points where they are attached to the shaft; and an outer shell with serrations set lengthwise all around its inner face. The clearance between the impeller blades and the serrated shell-surface is small. A certain definite quantity of chilled steel shot is placed in the shell, and the two ends of the clutch are closed by dustproof, snap-ring holding plates. The impeller portion is connected to the drive side of the clutch, and the outer shell to the machine to be driven.

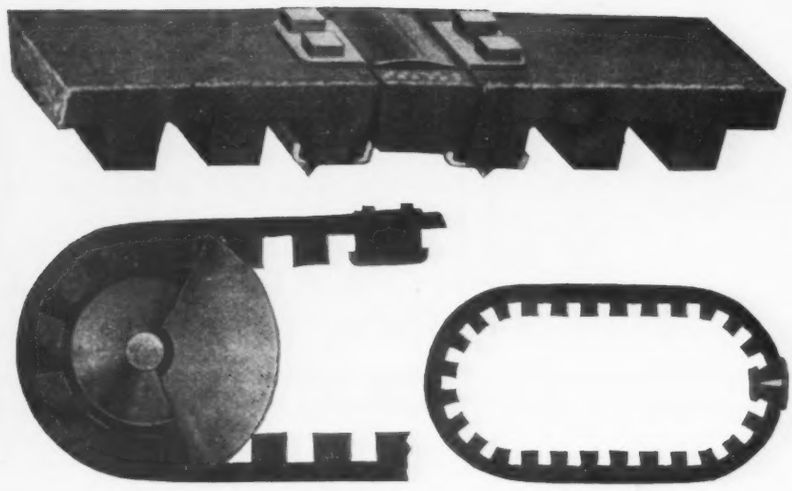
When the clutch is at rest, the chilled shot lie at the bottom of the shell. On starting the motor, the impeller blades revolve, driving the shot before them over the serrated surface. Some of the shot escape through the impeller orifices, and some are thrown outwards against



Diagrams showing operating principles of clutch for heavy loads.



Distributor belt with spikes attached



Three views of link-wedge belt

the serrations by centrifugal force. As the motor speed increases, however, more and more shot are forced outwards, thus gradually increasing the clutch action. Finally, when the motor has attained full speed, all the shot are tightly packed ahead of the impeller blades and transmit the full power to the driven element of the clutch.

In the event of an overloading of the driven machine, its speed decreases. This causes the packed shot to slip until safe balance is reached. Thus the load on the motor can never exceed that for which the clutch has been set. The slipping point is determined by the size of the charge of shot within the clutch, and may be set with accuracy. A telltale spring cam engaging with pins on the outside of the impeller unit affords an audible clicking signal which ceases as soon as the clutch is up to speed.

Fig. 1 shows the clutch at rest; Fig. 2, the clutch as speed increases; and Fig. 3, the clutch when motor is at full speed. In the diagrams *A* indicates the impeller; *B*, the serrated drum; *C*, dustproof endplate; *D*, orifice in impeller wings; and *E*, the chilled shot.

Enclosed Motors With External Fan for Cooling

A NEW line of dust-tight, totally-enclosed, fan-cooled induction motors has been brought out recently by General Electric Co., Schenectady, N. Y. These motors are totally enclosed, are equipped with ball bearings in convenient "cartridge" housings, and utilize a single ventilating fan located outside the enclosure proper.

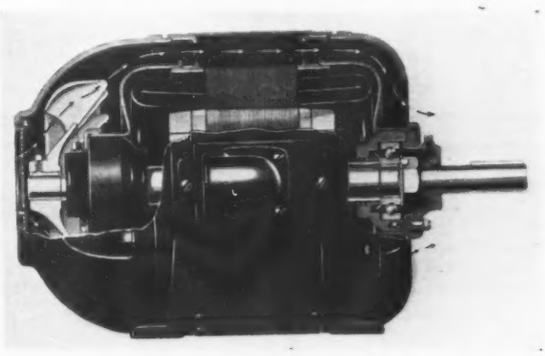
A point stressed by the manufacturer is the fact that the new line provides a totally-enclosed motor of the same mounting dimensions, rating for rating, as the standard General Electric open-type, horizontal, general-purpose motor, from ¾ to 50 hp., in popular speeds.

Size and weight are minimized in the new motors. The single ventilating fan is located outside the motor enclosure on a short shaft extension and on the end opposite the drive end. A double frame is used, providing air passages for the ventilating air. All enclosing parts are of substantial steel or cast-iron construction. The fan is housed in a cast-iron enclosure with a heavy screen guarding the large opening for the intake. The air is blown through the ventilation passages and out the drive end.

Any necessary disassembly or reassembly of the motor is facilitated by the simplified mechanical construction. Dust-tight, cartridge-type ball-bearing housings are a further aid in this respect and permit removal of the rotor without exposing the bearings to dust or dirt. The motor is endorsed by the Underwriters' Laboratories for hazardous dust conditions specified as Class 2 in the National Electric Code.

Link-Wedge Belt

NEGOTIATIONS have been completed recently by the Dayton Rubber Mfg. Co., Dayton, Ohio, for the manufacture and distribution in this country of the V-shaped link-wedge belt developed originally by the Roderwald Co., Berlin, Germany. The link-wedge belt is said to be suitable for use on pumps, line-shaft drives, power drives from fractional to thousands of horsepower, and other types of equipment. The belt is constructed of fabric and rubber and is of V-type construction with integral cogs on the inside. It runs on a stardard V-shaped pulley. Outstanding features of the belt are that it is adaptable, flexible, and adjustable to any length desired. A metallic clamp is used to join the ends.



Totally enclosed, fan cooled, induction motor

COTTON
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WORSTED YARNS

. . for every standard need of the knitting and weaving trades. And if you require something "special", these mills are ever ready to cooperate in producing the yarns to suit your styling requirements.

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Combed yarns spun from American or Sakellarides cotton.

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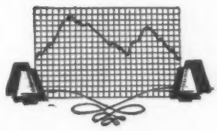
TEXTILE WORLD ANALYST



Wool Weak Till General Business Gains

Control of Yarn and Fabric Output May Stabilize Market for While, Says Dr. Haney

Summary: **The wool manufacturing industry is merely reflecting general business conditions, with prices and production tending to sag as a result of low consumer purchasing power and general economizing. Manufacturers appear to have their output under good control, however, and when general business begins to pick up (as it may do by spring) the industry will recover rapidly. Meanwhile, further moderate and irregular declines in wool, yarns, and cloth are to be expected during the next month or two.**

●

The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

DEVELOPMENTS of the last month have not been favorable to the wool industry. The hoped for stability of raw material prices has not been fully realized. As a result of foreign influences and poor demand from the mills, wool prices were easier in the United States. The immediate cause, apparently, was not so much the marketing of large clips in the Southern Hemisphere as it was the partial breakdown of efforts by holders of raw wool to sustain the London market.

The wool cloth markets have recently been helped somewhat by cold weather, but hope for fall season demand has been given up in favor of anticipations of spring business, though thus far this has been disappointing. Wool cloth stocks have been curtailed, but reduced supply is a passive factor. Until demand for wool goods becomes more active, curtailment of production will not bring prosperity to the industry. This demand probably awaits the revival in general business which is still some months away.

Favorable Factors

1. Australian markets were firm during most of November; fine merinos advanced 5% in price. This is a good showing for a month in which a new clip was being marketed.

2. Holders of raw wool at London are reported not to be attempting to hold up prices through withdrawals, yet quotations held fairly firm after the opening declines. London is nearer parity with both Australia and Bradford. Declines in November auctions had been partly discounted.

3. Domestic supplies are not believed to be burdensome, and they are strongly held. Estimates are that one half of the clip has been sold.

4. Wool imports and receipts are at low levels; stocks in bond decline slightly.

5. Strength in Australia increased the difficulty of domestic manufacturers in importing competitive grades of fine wool.

6. Spinners' replacement margins were slightly better in November.

7. Stocks of all fabrics declined 13.1% in October, chiefly due to a decline of 18.1% in stocks of women's wear.

8. The November spurt in automobile production has stimulated the demand for upholstery fabrics.

9. The decline in raw wool prices and the increase in cotton and silk prices in November, improved slightly the relative position of raw wool as a competitive fiber; some wool merchandise is reported to be selling now at pre-war prices.

11. Wholesale dry goods sales increased again in October.

Unfavorable Factors

1. London auctions opened at par to 15% decline; fine merinos were lower than expected. Australian markets declined following the break in London prices.

2. The decline at the London auctions and in Australia, puts the domestic market further out of line with world markets.

3. South American crossbred wools are in favor of buyer. The Argentine clip is 6% larger than a year ago and is also above the average of the last five years.

4. Bradford top prices remain at lowest level in recent years.

5. Knitting demand for yarns has subsided.

6. Machinery activity in woolen and worsted goods mills declined to a new low in October, after allowing for seasonal changes. Mill consumption was less than in September.

7. Men's wear fall and winter business poor, and spring business still backward; stocks of men's wear goods increased 3.6% on Nov. 1.

8. Cloth prices continue to decline. Some mills have cut wages and then goods prices. On the basis of the current replacement margin, the average manufacturer is operating at a loss.

9. Keen competition among retailers, who are reported demanding price concessions.

10. New lows in general business and the stock market in November; factory payrolls fell sharply indicating further declines in purchasing power.

The above analysis indicates a continuation of the rather uncomfortable position of the domestic raw wool market. Already close to parity with competing grades in Australia, it is now

The durene fabric that makes the smart youthful bandeau and shorts shown below is an exact copy of an imported knit fabric. Lace-like in appearance . . . soft and fine, it is wonderfully absorptive and comfortable.

Spring Lines Show Smart Styling in Hosiery and Underwear of

Durene

QUALITY BEGINS WITH THE YARN

HAVING proved to their complete satisfaction that it pays to feature hosiery and underwear of durene, many manufacturers have prepared durene specials, to lead their coming lines.

The durene stamp or label identifies the very finest mercerized cotton — so fine that only one bale of cotton out of twenty-five is up to its requirements. Special processing gives it a dull soft lustre, greater elasticity, absorptive quality, strength and durability. The hand is especially pleasing, strengthening the immediate impression of worth. With continuous care in selection and processing, durene naturally outwears ordinary cotton many times over.

Durene hosiery for men, women, and children may be of pure durene, or durene in combination with other yarns. Women's silk stockings, with feet and tops of durene, are featured by many stores. Favored durene numbers also include union suits, pull-over shirts and polo shirts for men; combinations, vests, bandeaux and shorts for women, and children's underwear of every type . . . Let us tell you about the strong sales support we have planned for you in 1931—call, or write.

Smart, durable Brother and Sister suits of durene-worsted jersey are now being produced by a leading garment manufacturer.

. . . DURENE MAKES CHILDREN'S CLOTHES THAT ARE SERVICEABLE AND SMARTLY MODERN . . . . . .

Good-looking, serviceable and washable . . . a durene-worsted jersey suit is comfortably warm without excessive weight.

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confronted with a more than expected decline in prices at London.

It was, of course, rather encouraging to receive reports that Australian markets were firm and against the buyer, and that this strength would tend to check the imports of fine merino wools of competing grades. It was also reassuring to find firmness in some of the primary markets during a sales-period of the new Southern Hemisphere clip.

South American wools, however, continued in favor of the buyer, and Australian markets reacted to the weakness in London. Thus the domestic market is out of line with world markets. It also has to contend with a low level of demand, as the index of machinery activity in wool mills was close to the low of the year in October and mill consumption of raw also declined.

Will the effort to keep the wool market on a "domestic basis" succeed? Possibly, if business recovery were at hand, prices could be held until foreign markets recovered. But there is no sound basis for predicting a sustained improvement in purchasing power for some months yet. In the long run, there can hardly be such thing as a "domestic basis" for world-market commodities such as wheat, cotton, or wool.

Pressure on world wool markets, and low manufacturing activity, have caused a further decline in the TEXTILE WORLD'S raw wool price index. The November index at 64.3% of the 1921-1928 average, was the lowest for the year as well as the lowest since 1921. It compared with 65.4% in October and 85.9% a year ago. The November decline, however, was comparatively small, and it seems probable that further concessions will be necessary in order to keep domestic raw wool prices in line with competing foreign wools.

WORSTED YARN POSITION WEAK

The TEXTILE WORLD index of worsted sales yarn prices was unchanged at 75.9% of the 1921-1928 average during November. This compared with a figure of 92.1% a year ago. Steadiness in most yarn prices, and declines in raw wool, caused a slight rise in the average spinners' replacement margin, but the continuation of such improvement is doubtful. Demand for outerwear and knitted goods is reported to have slumped, and the adjusted index of loom activity in October was the lowest since 1921. Yarn consumption for weaving purposes is apparently dwindling faster than yarn production, which is indicated by worsted spindle activity. For this reason, the margin of spinners on a current replacement basis may be expected to go lower. Such lowering of margins is likely to result from a decline in yarn prices following the price recessions in raw wool.

WOOL CLOTH

The Bureau of Labor Statistics index of woolen and worsted goods prices in October was 82.5% of the average for 1921-1928, against 83.5% in September, and 94.9% a year ago. Since loom activity was reduced, it is probable that demand for cloth had fallen off more than supply, and, with further declines in raw wool, lower cloth prices are probable within a few months. But it can be said that the mills are promptly adjusting supply to demand, and, as there is good reason to suppose that both stores and consumers have been buying with extreme conservatism, the ultimate improvement in cloth prices and manufacturers' profits is likely to be rapid. These things only await general business recovery.

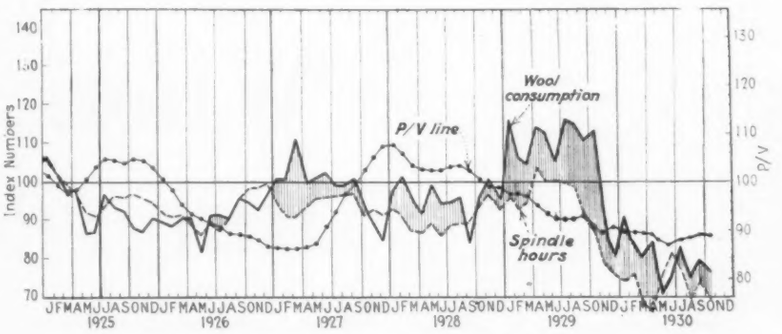


Fig. 1. GENERAL BAROMETER OF WOOL INDUSTRY: Wool Consumption—Grease equivalent; adjusted for a number of working days and seasonal variation, 1921-1928 = 100 (Dept. of Commerce). Spindle Hours—Average of woolen and worsted spindles, per cent active hours to total; adjusted for seasonal variation, 1921-1928 = 100 (Dept. of Commerce). P/V Line—Ratio of general commodity price index to volume of trade (Bureau of Business Research).

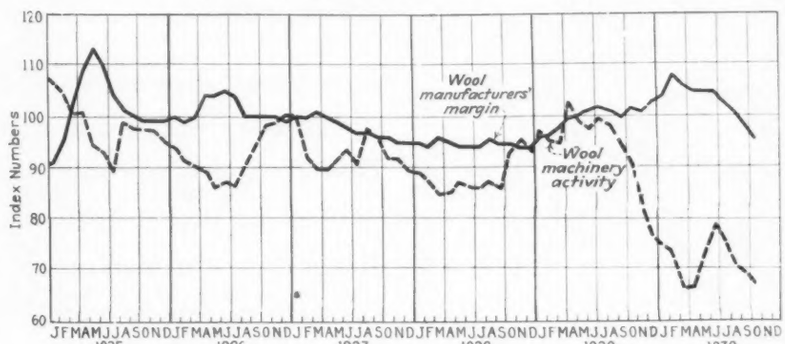


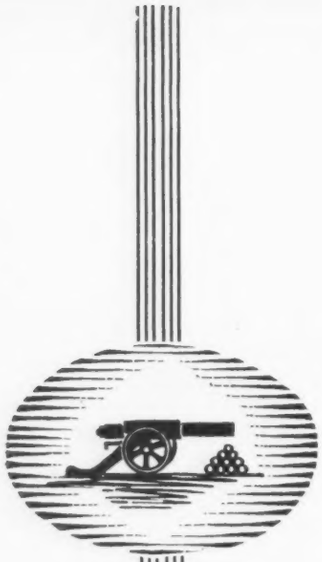
Fig. 2. WOOL MANUFACTURERS' MARGINS AND ACTIVITY: Wool Manufacturers' Margins—Average of Replacement Margins; Wool Machinery Activity—Composite of Loom and Spindle Activity, adjusted for seasonal variation; Average 1923-1927=100 for both indexes.

The Textile Trend

COTTON TEXTILE MARKETS: An unusual feature of the cotton goods market is the large number of houses actually trying to do business despite end-of-the-year low inventory talk. These concerns are acting on the assumption that because stocks in all hands are sub-normal, there should be buying right down to the last bell this year. Such houses are meeting with more success than anticipated and they are becoming encouraged to sell next year deliveries this month. Indications are that if cotton holds steady, there will be more active buying this December than in that month for several years. Prices have not moved either way and cloths that were so active during the fall buying wave, are now strong when spot shipments are wanted. An example of this is 80-squares which have been the most active and are now the firmest. Chambrays, denims and broadcloths are in fair demand; sheetings have been quiet in first hands but large retail sales may help this section of market soon.

WOOL GOODS MARKETS

Wool goods sellers do not anticipate an active month. Seasonal demands for winter goods have practically been met. Small, last-minute orders are still being noted but most attention is being given spring lines. Buyers generally are not ready to operate that far ahead, but there is scattered booking of fair-size orders by dress goods houses on the rough fabrics that are expected to develop into volume sellers for the next



When a new line scores . .

When you bring out a new number make sure the *first* ingredient is right. Without yarns that measure up—you are handicapped at the start. Yarns are the vital ingredient. All other factors are dependent.

The Cannon organization has cooperated time and again with mill men inaugurating new lines. The diversity of our numbers—the sturdy resources of many mills acting under coordinated direction—the conveniently-located sales offices (there's one near you)—these are some of the factors which account for Cannon preference.

What are you bringing out?

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INC.

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CANNON YARNS

women's season. In dress goods, fabrics which are little heavier than cottons in weight are expected to prove good numbers. Men's wear trade is less willing than women's wear to buy ahead and most houses are making plans for "after the first of the year," believing that buying will continue to contract as end-of-year approaches. Worsted yarns are quiet and prices unchanged.

Knit Goods Markets

Knit goods are hesitant; jobbers report sporadic Christmas coverage on certain lines, especially hosiery, but the market at a whole is quieter. Heavyweight underwear movement has slackened; mills are in fairly good position, thanks to active advance buying in November; indications are 1931 openings will be deferred until February. Heavyweight sweaters are backward, and spring sweaters are not expected to pick up before Jan. 2. Bathing-suit demand for spring delivery is stronger. Hosiery trade leaders strongly urge curtailment, to solve present overproduction and two important mills announce 30-day shut-down. Hosiery movement is uneven; a few firms are active but the trade as a whole is well behind even seasonal increase.

Silk Textile Markets

Raw silk is steady and importers are more confident than they have been in some time. Broadsilk weavers cover actively and considerable future business is being written. Lack of stocks in Japan and badly assorted grades have developed something approaching a seller's market, but the trade looks for a let-down in demand within ten days. Thrown and spun yarns are steady, with the latter selling actively for spot shipment; there is little future demand in either market. Holiday lull has slackened movement of broadsilks and prices are uncertain on some spring lines; weavers are confident of spring prospects, however, and look for sharp upcurve in buying after New Year.

Cotton Fails to Hold Its Gains

Spot Markets Quiet With Basis Steady, While Buyers Guess on Coming Acreage

REACTIONS which followed the late October advance in cotton carried the market back within 15 or 20 points of the low records of the season established on Oct. 8, during the last week. New December contracts which had advanced from 10.13 on Oct. 8 to 11.58 on Oct. 28, and May which had advanced from 10.55 to 12.21 during the same period, broke to 10.27 and 10.85 respectively on the decline of Tuesday. These prices brought in a little more trade buying as well as covering, but moderate rallies were followed by renewed declines with the market rather narrow and irregular at the end of the week.

Market Position Uncertain

In a general way, it is easy to describe the market as fluctuating between a bearish statistical position and a subnormal state of trade on the one hand, and the expectation of reduced acreage and eventually stimulated consumption on the other. It would be difficult, however, to trace the fluctuations from day to day or from week to week to any one of the various uncertainties which are evident in the situation. The increased buying power of gold as reflected by prices for commodities in the world's markets, is probably creating uncertainty as to just what price for cotton may be considered a bargain, and the action of the futures market would suggest that there is not too much confidence in a reduction of cotton acreage at prices above the 11c. level. Nevertheless, some well-informed cotton men who have studied the situation closely, say that regardless of hair-splitting over the economic reactions of fluctuations in the value of gold, and without overemphasizing the campaign of the Federal Farm Board for curtailment, there is almost certain to be a considerable reduction in cotton acreage next year. This, they say, will be the result of financial conditions in the South, and they make the further point that while unemployment may operate against curtailment of acreage, there will certainly be less money to spend for fertilizer, so that reduced yields per acre as well as curtailment of acreage is likely to be a factor in next season's outturn.

Meanwhile if a low price for cotton under present world conditions is to have a stimulating effect on consumption, the fact has not yet become apparent in the statistics of distribution. People, it seems, are quite generally buying only for needs which cannot be deferred. In this connection it is not unlikely that many individuals or families which stocked up with cotton goods in the low-price and big-crop season of 1926-27 and maintained their supplies during the period of over-speculation and apparent prosperity, have bought very sparingly indeed and have been using up their reserves since the stock market decline of last year. The decline in the price of the raw material, however, has been slow in working back to the retail counters. Its progress has doubtless been retarded by the resistance of labor, which has maintained high over-heads, but judging from current daily newspaper advertising, the buyer at retail is now getting some advantage of the decline and is able to get more for his dollar, particularly if he will shop for it. This may show in the world's consumption before the end of the season. The slight increase which has occurred in world's consumption of American cotton from the low point of the summer has, perhaps, been little more than seasonal but it is somewhat encouraging to think that the world situation is not too unfavorable to permit of a seasonal increase. According to the New York Cotton Exchange Service, world's consumption of American lint for October was 969,000 bales compared with 892,000 in September and 835,000 for August.

Expect Little Crop Change

Meanwhile there has been little conjecture as to the probable showing of next Monday's Government crop report and the private reports published during the week have had little or no effect on the market. Figures on the indicated crop in bales of 500 lb. have ranged from 14,280,000 to 14,697,000 bales. It is not generally expected that the final Government report next week will show much change as compared with the 14,438,000 bale indication of Nov. 1.

Easier to Sell Than Buy

MEMPHIS, TENN., Dec. 1.—Cotton has become easier to sell than to buy in this market, although it is necessary to make concession to sell some descriptions. Declines in contract values have not been reflected in seller price ideas. The higher asked basis resulting has brought about something resembling a stalemate.

Buyer competition was somewhat in evidence about the middle of the month but this disappeared during the week, notwithstanding that, owing to maturing commitments, demand is usually more active near month-ends than at other times. Some buyers may have held off where possible, expecting that sellers may be easier to deal with as the holidays approach; however, because of the ease with which it has been possible to finance holdings this year, there may not be much distress cotton.

Sales here for the week totaled 20,458 bales against 33,333 last year, making 385,746 bales for the season against 654,725 last year and 378,164 the year before. Demand centered on the better grade staples, especially 1 3/16 in. which was hard to find, and on bright low grades. Demand seemed to be developing for off-colors, but was of no large proportions. The higher grade staples and bright low grade character cotton commanded full values on most actual sales but other cottons, as a rule, had to be offered "at a price" to attract buyers. Shippers say domestic mill inquiry is only fair and mill price ideas unacceptable. Export business is extremely limited. There is gen-

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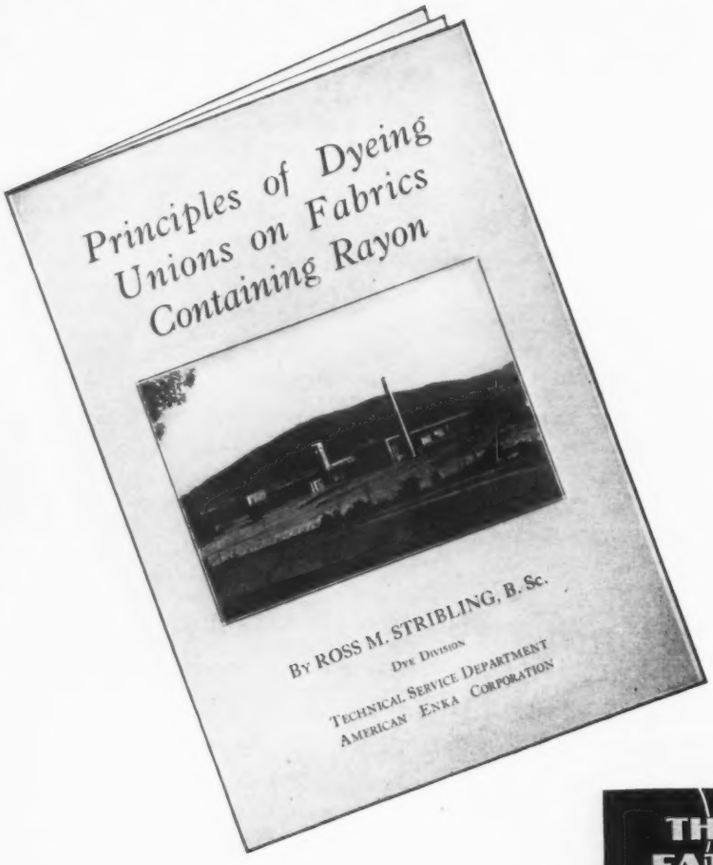
Principles of Dyeing Unions on Fabrics Containing Rayon
By ROSS M. STRIBLING, B. Sc.
Dye Division
Technical Service Department
American Enka Corporation

THE Technical Service Department of American Enka Corporation performs many functions for the benefit of the textile industry. One of the most recent contributions of this division is a booklet that should be on the desk of every individual who is directly or indirectly affected by dyeing.

"Principles of Dyeing Unions on Fabrics containing Rayon" by Ross M. Stribling, B.Sc., Dye Chemist, Dye Division, Technical Service Department, American Enka Corporation, is compact, concentrated, full of vital information, and tremendously valuable to buyer, seller and dyer of fabrics.

The foreword of the book is worthy of note —"*Union dyeing, that is, dyeing mixtures of different fibres as rayon and cotton or rayon and wool the same shade and color, is an operation presenting many difficulties and requiring keen observation and much experience. However, by observing certain fundamental principles and suggestions which are briefly explained here, these difficulties should be greatly reduced or partially eliminated.*"

The booklet treats rayon and cotton mixtures and rayon and wool combinations separately. It describes the processes of hosiery and knit goods dyeing in detail. It also explains the scouring, bleaching and dyeing of wool mixtures.

We shall be glad to send a copy of this booklet to any executive who sends us his name. Learn how to dye. Learn how to judge dyeing. Send for your copy. We will also send a copy of our new chart showing the correct winding methods for American Enka Yarn Skeins.

•

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eral complaint against the co-ops on the idea that they are underselling the spots market and replacing with futures.

◆Cotton Wastes Less Active

COTTON waste trading was less active this week and prices on stuffing wastes and threads were somewhat softer. Demand is of a hand-to-mouth character, and no forward business of any consequence is looked for by dealers until after the first of the year.

Prices on Egyptian comber and strips are quite firm owing to the relatively small supplies of these materials. The tariff of 7c. a pound on long staple foreign cottons has greatly restricted output of Egyptian wastes during recent months. Peeler comber could be bought this week as low as 9c., but for choice material 9¼ to 9½c. was asked. Bedding stocks continue in fair demand from mattress manufacturers. Threads are slow.

Cotton Yarns Show Resistance

Hold Steadier Than Raw Cotton Market

THIS December is different in one important respect. The usual practice is for manufacturers to delay buying wherever possible until after the first of the new year, to keep their inventories at end of year as low as possible. This year the difference is in the number of large operators who are willing to buy well into next year.

This is not resulting as yet in any great volume, but indications are that a larger amount of buying will be closed within the next three weeks than in any recent year.

There are difficulties arising in this connection which will be ironed out. In the first place, larger buyers want substantial concessions from prevailing quotations. In the second place, few spinners are willing to sell any part of their 1931 production at the prevailing slim margins. When we see cotton at 10½c, and 10s cones 9½c above this level we know that spinners are not becoming rich.

Spinners' Margins Small

In weaving numbers the same situation exists, there being insufficient margins above cotton costs for spinners to make any effort to sell far ahead. Most carded spinners have a fair amount of forward orders on their books that will be delivered during next month. Until these run out they will not be in a mood to take more non-profit business.

That the two may get together is seen in the instances where large insulators within last month covered for first six months of next year; at least one wanted to buy for the last six months of 1931 and they found a small group of spinners willing to figure with them although reports are that nothing beyond the middle of next year has been closed.

Higher Prices Indicated

Spinners quote higher prices for far off deliveries while buyers feel they should get lower prices. The fact that business closed has been small shows that few spinners will consider this, rather than that few manufacturers are ready to buy ahead. The number of spinners who refuse to sell 1931 at any price is greater than in former years by a large percentage.

Spot business is poor. This is so because of seasonal influence to curtail end-of-year purchases and because most manufacturers have enough yarn on order to last them until the end of this year. There is no idea held that prices will change this soon and for that reason they are delaying small lot buying until next year notwithstanding that they are bullish on a long pull for cotton.

Although current orders are small in size and the total of little consequence, prices named by spinners and dealers have held well, there being little change as compared with last week even though the raw material market has been easier. Yarns did not follow cotton up during last spurt; it is natural then to see prices holding while cotton goes back again. Carded weaving numbers are selling at 22c. for 20s-2 warps average and 27c. for 30s-2. The little selling ½c. under these prices is too small to enter into the situation.

Southern Markets Quiet

Southern centers continued in a state of apathy and general buying is not expected to develop until after the first of next month. While demand for carded qualities is not large, spinners are less inclined to accept reductions from present ideas evidently feeling that these are at rock bottom on present raw material level.

Weavers are reported to be requesting postponement of deliveries on existing contracts until after first of year. Combed yarn spindles of Gaston County area operated at 45% of normal capacity last week, a decline of 1% from previous week.

Spot Cotton Goods Firm

December Volume May Be Larger Than Expected

LOOK for nothing and that will be about what you will find. A number of cotton goods houses point out that December is normally a quiet month. For that reason they profess to see a dull month ahead. Yet there are a number, and these are more numerous than in past years, who believe that while spot business will diminish as the month progresses, there will be a good interest in 1931 deliveries.

There has been little buying into next year and should cotton and goods hold steady during the first half of this month, it is probable that there will be a larger amount of contracting for early next year delivery than is usually seen.

Active Lines Holding Well

The market has not been any more active this week than during the last of November; but there is a fair degree of firmness apparent in quotations named by first hands. Prices of the most active goods of the fall months are strong when buyers want immediate delivery; less active lines are not so firm either for spot or future shipments. Probably the best of all is 80 squares.

First hands quote this description at 8c. for spot and 7¾c. for next year shipments. It is noticeable that buyers are unable to obtain delivery for three weeks from large firms even when they are willing to meet price ideas of the seller. This is not a criterion of the entire market, 80 squares being so active during recent weeks that it is in a class by itself so far as firmness is concerned.

Broadcloths Selling Well

There is a fair spot interest but little future contracting in chambrays, denims and flannels. Broadcloths have been selling as actively as any cloths in the market with exception of 80 squares, 90 x 60 and 100 x 60 descriptions being in demand. Pajama checks have been quiet.

Towels have been selling more actively but sheetings have been dull. In this connection it is reported that sheets and pillowcases have been especially active in big department store sales within last few weeks and this will be a factor in the primary market in the near future.

The market as a whole presents a

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- **DU PONT SELLS MORE YARN** to mills to fill converters' orders.

Some observers say this sort of advertising only holds present customers. But we find that it does more than that. Our pages have sold a lot of yardage. Success stories travel fast. As a result, we are adding new customers in both the weaving and the knitting field.

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fairly steady and optimistic appearance and while spot business may not develop into any broad buying movement this month, houses that are not taking this for granted are benefitting, both in order for spot delivery and in orders which are being booked for next year shipments.

Wools Without Material Change

Worsted Wools Maintain Lead; Woolen Sorts and Substitutes Sluggish

SOME improvement in demand is seen in the wool market but not enough to satisfy holders who still have considerable quantities of unsold wool. The major portion of the unsold clip is in the hands of the marketing organization. Although the statistical position seems strong, it does not generate the amount of confidence that might have been anticipated. The firm position of merinos in Australia and South Africa is a sustaining factor, and yet not of sufficient force to prevent the domestic market for merinos from exhibiting a sagging tendency. Top-making interests endeavoring to secure concessions on suitable wools have not made much headway against the firm attitude adopted by the cooperatives and independents. Mill buyers in general are not buying freely nor is this to be expected until a larger goods business is placed.

Inquiries for the finer grades of wool are being received more frequently but sales are moderate in volume. Sales include further quantities of original bag French combing territory wools at prices mostly in the range of 64 to 67c., clean basis, depending upon length of staple. An occasional lot of good combing wool brings slightly above this range, while offerings of bulk short French combing and clothing staple are available down to 62-65c. clean basis.

While it is sometimes difficult to say what wool values really are, there is nevertheless a general determination to hold raw wool until better conditions arrive. The crossbred situation is a matter of uncertainty, not likely to be cleared up until the South American and New Zealand markets are further advanced. In the meanwhile domestic quarter-blood wools are quoted 1c. or more per grease pound lower than at the beginning of last month.

Manufacturing Balance

There was little change in wool manufacturing in October. Worsted spindles showed a slight increase but on the other hand wool combs showed a larger decrease. Taking the industry as a whole the increase over September was less than 1%. Compared with October, 1929, the woolen branch continues to operate within a zone of marked depression, but the worsted branch, though less active than a year ago is in a relatively better position.

The opening day of the sixth and last series of London wool sales for the year developed no new feature of importance. Buying was cautious and competition not particularly keen. Compared with closing prices of previous series, merinos were off 3 to 7%, crossbreds 10 to 15%. The general line of scoured and pulled wools showed similar decline. In the interval between the fifth and sixth series prices had been steadily declining so that the lower values recorded simply established prevailing prices in the open market. The New Zealand season opened actively at Auckland. There was good interest and fair competition with 75% of the wools cataloged for first day's sale taken by buyers, Germany the largest operator and Bradford in the second place.

Sluggish Demand for Reworks

Woolen mills it is said have no longer any use for "shoddy." Mill wastes, noils and wools are on such low levels that the processed products of the old rag market have lost their attraction for manufacturers, so the story runs. There is probably no real truth in this view of the situation. Although demand is exceedingly slow there continues a steady though restricted call for the many colored reworks. These materials do not suffer direct competition from wool wastes and by-products.

The rag trade seems bewildered by an unusually limited interest seen in its offerings. Mill buyers have the whip hand and they know it. Some graders are under the impression that one way of strengthening the situation would be to suppress as much as possible prices relating to mixed rags. It is doubtful whether mill buyers know much about the relation of the mixed softs price to the prices of the various rags graded therefrom. Mixed rags at this time are on a wider range than usual. Quoted in some quarters at 4¼ to 4½c., some high grade establishments catering to a good mill trade state that such prices are ridiculous; "we cannot buy a good bale of soft woolens for less than 5½c."

Low Wool Depresses Wastes

Business in wool waste has been very slow for weeks nor is there any indication of a distinct change for the better. The price trend has been downward throughout the year, though in the last month or two values have been moving sideways. The curve of waste prices and that of commodity prices exhibit marked similarity.

The generally low price level at which wools, both shorn and pulled, are available for the woolen industry seems a handicap to an immediate expansion in the demand for wastes. Dealers in wastes do not like to cut prices on their commodities to a bargain level. Not having purchased the same on any cheap price basis, they are neither able nor willing to make a bid for the woolen trade by demoralizing their own market and, as a further factor in the situation, worsted mills have no intention of selling their by-products and wastes on a level to accommodate a cheap low price demand from woolen consumers.

Noil Demand Unsatisfactory

The noil market opens December with business still at a low ebb and no sign of any improvement in the immediate future. Good noils are considered good property and prices are quite low, but so long as the supply is considerably in excess of the demand just so long will the price situation remain unsatisfactory, particularly for those who have bought noils on a higher level than current market values. Noil dealers throughout the year have been trying to do business in a falling market.

Worsted Yarns Are Quiet

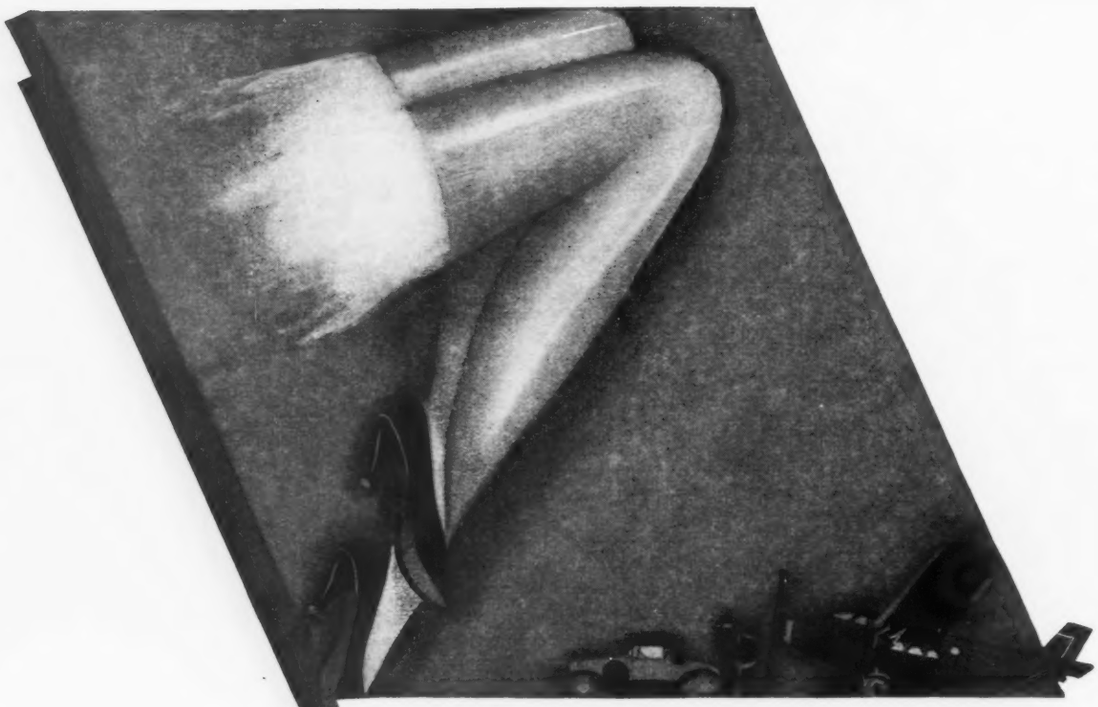
Good Specifications From Men's Wear Mills

FRENCH system and English spun knitting counts, while quiet, are fairly steady in price. English spun weaving numbers are practically nominal because of the lack of trading in them during recent weeks, the total moved this week and last being insufficient to determine a price level. These yarns have not been changed for a number of weeks. During this time outerwear and French system numbers were lowered approximately 5c.

Opinion in the market is that when substantial orders in English weaving yarns are placed there may be slightly lower prices involved. In the other two sections, small concessions may be made by spinners when they feel the time is opportune to strike for new business, which they do not feel at present.

Many Quotations Nominal

A number of English outerwear spinners are holding 2-20s, 50s at $1.00



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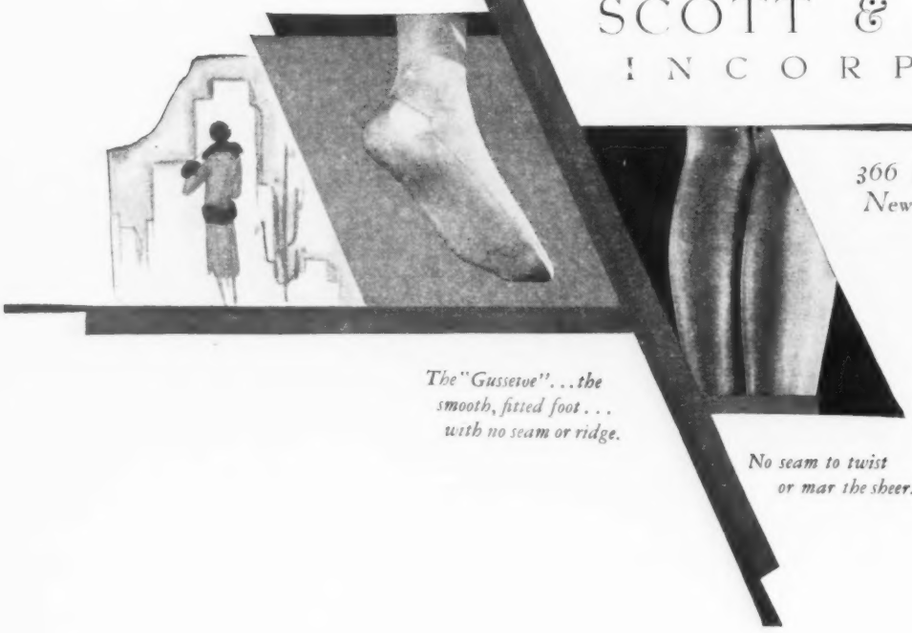

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when manufacturers are able to buy unlimited quantities of this 2½c. lower. When questioned several said they were doing so little business, and their competitors, who were lower, were in exactly the same position, that it would be useless to lower their own quotations.

It can be definitely stated that there is no great complaint from buyers about prices. They feel that based on current wool prices, yarns are fairly priced although manufacturers believe they will be able to buy under current figures if and when they are ready to talk in sizeable amounts. This is not possible at present, buyers wishing to keep purchases low as end of year comes to hand.

Larger Men's Wear Movement

One of the brightest spots in the situation is the large specifications on old contracts being made by men's wear manufacturers, most of whom in Philadelphia are working at good rates, several at nights. They are taking large deliveries on old contracts for fancy yarns, contracts that were placed six week ago, that originally called for as much as 150,000 lb.

Up to present it has not been such good business for mixture yarn spinners due to the fact manufacturers as a rule have not got into volume production on spring lines in any one number; as a result specifications call for a relatively few pounds of a wide variety of different qualities of mixtures. Spinners are now quoting mixes 5c. lower than they were a month ago.

Outerwear Yarns Quiet

Sampling is the rule among outerwear manufacturers and yarn consumption is on the same basis. They are buying less than last week and their consumption has fallen off although not any worse, if as bad, as normally seen in December.

Most buyers want and receive Jan. 1 billings on yarns that they are buying. Holiday goods are out of the way so far as spinners are concerned and volume business in the next few weeks depends upon the booking of new spring orders. Spinners feel that novelty lines will be big sellers to go into spring sweaters and knitted dress goods. Rayon twisted with worsted is expected to be a larger seller than last year.

◆Smaller Wool Goods Interest

THERE is a disposition among most sellers to almost count December out of the picture so far as volume business in men's wear or dress goods is concerned. Trading has been of small size during recent weeks and indications are this will be smaller as buyers pay more and more attention to their inventories as end of year approaches.

Seasonal demands for both men's and women's fabrics have been largely met so far as spot deliveries are concerned. What is passing now is small in size and means little to mills except that they know stocks are growing smaller each week. Some time in the future they will benefit by this condition in the way of replacements. It does not help them much at the present time.

Sampling Is Satisfactory

There is free sampling of woolen and worsted lines for women for the spring season and several houses have booked fair sized orders. These are the exception and not the rule. Volume business for next season remains to be placed and with showings receiving good attention there are indications women's wear will see a period of fair to good demand shortly after the first of the year.

What will the goods markets do about cheap prices of medium wools in comparison with fine grades? The new season being the lightweight, will probably see the call for fine continue but there is more and more attention being given to the possibility of wider use of quarter blood.

Lightweight Dress Goods

Yet indications in dress goods are for continued popularity of fabrics made from fine wools and fine count yarns. The new worsteds are frequently only 5 oz. in weight and this means use of fine wools. It is felt, however, that room can be made here for lower grades and heavier yarns if goods are to take advantage of low prices of medium wools.

Refusal of wool goods buyers generally to operate in the future, never more noticeable, gives the impression that little of importance will be seen this month. Attention of many sellers is already being given to "after the first of the year."

Silk Futures Stronger

Steady Week Stirs Hope That the Worst is Over

THERE is a better tone in the raw silk market this week; prices are firm, with a slight upward slant on some grades, and broadsilk weavers are buying actively. Importers are more optimistic regarding spring prospects; they look for a drop in the present buying spurt shortly before Christmas, but expect the lull to last not more than four weeks at best. There is a leaning to future coverage, always a good sign, and if it were not inventory time, buying for spring would be emphatic, importers believe.

These encouraging signs are merely comparative; actually, the market is far from prosperous, but the steadiness of raw silk for the past four weeks gives strength to the hope that the worst is over. Broadsilk weavers are confident about spring prospects for their print fabrics and some report substantial business already booked; this has stimulated advance buying of raws and there was a fair quantity of January-to-June business placed during the week. There is less bickering on quotations. The chief complaint is that importers cannot fill spot orders for specified sizes, due to the small stocks now obtainable from Japan; then too, these stocks are poorly assorted and uniform quality grades are at a premium.

December is proving more active than had been expected and while no one looks for more than ten days of the current volume, this spurt has done much to strengthen the tone of the market and to bolster up the quotations which were in much need of such support.

On the Exchange

The week was steady. Prices were easier Nov. 25, and there was only mild buying interest; this situation continued Thanksgiving Eve, but Nov. 28 brought a mild recession, quickly followed by a firming. Trading Monday and Tuesday was quiet and prices held their own; futures gained gradually and by Wednesday showed considerable movement at prevailing levels. The growing interest in futures was the week's chief feature and was considered significant as firm prices kept this trading out of the "bargain" class. Importers were more encouraged by the steady week than by the sporadic jumps that preceded it, as they see a better chance for continued progress when advances are not too sudden.

◆Thrown and Spun Yarn Prices Steady

SILK yarns are steady, and demand for spun silk for early spring delivery is satisfactory. All orders are small, but spinners are in a fairly good position. Broadsilk mills continue covering, both for spot and future shipment of shantung yarns. Woolen and worsted mills are more confident regarding movement of their fabrics, and are placing considerable business with spun yarn houses. Spinners say December has opened better than was looked for and they are optimistic about January.

Thrown Yarns Quiet

Thrown silk prices hold firm, but there is no great call for yarns. Weavers are buying crepes, chiefly in small quantity for immediate shipment. Hosiery mills are more cautious on production and have eased up on yarn

orders. Grenadines move fairly well, but buying is below November; trams are quiet. Throwsters will inventory fair-sized stocks; sales have been backward, but production was restricted accordingly and the outlook for the year-end is considered good.

◆ Movement of Silk Fabrics Slackens

MOVEMENT of broadsilk fabrics has slowed up in all divisions; the decline is slightly more pronounced than usual for December, due to a certain hesitancy still lingering in the minds of buyers regarding spring. Weavers are disappointed but not surprised at the letdown, and they are reconciled to a period of quiet which will continue until the middle of January. The market is fairly confident as to January-February prospects; mill men reason that the insistence of the consuming groups on writing the minimum inventories will find these outlets short of fabric stocks in January and will compel prompt buying. Broadsilk production has not declined in proportion to sales, but there has been a degree of curtailment, especially by the largest manufacturers who claim that they will enter 1931 with only moderate spring stocks.

Flat crepes are emphasized in the current light buying, and a fair quantity of spring business is being placed. Prints are accented in promotion and small florals are preferred. Sampling is the order of the day; buyers hesitate to cover, and even spot orders are very small.

Increased output of shantungs by a steadily widening circle of mills is causing apprehension among sales executives, some of whom see the rough goods as tending toward a low price proposition. It would be advisable for shantung manufacturers to watch their stocks to avoid unhealthy accumulation of spring goods. Spring prospects for these fabrics are unquestionably good and a lively consumer demand, both for yardage and for shantung ready-to-wear may be looked for; the new shades and particularly the distinctive shantung prints, are winning favorable attention among buyers. However, output is on the upgrade and it is possible that spring demand may be overestimated. A policy of caution, at least until mid-January when spring prospects will be more easily gauged, is advisable.

Rayon Guarantee Taken Coldly

Buyers Not Taking Advantage of Opportunity to Cover

THERE is a fair movement of rayon yarn in the domestic market, but all buying is hesitant and limited to small orders. Manufacturers are not taking full advantage of the 60-day price guarantee, according to sales reports which show fair-sized coverage for December and only a scattering of January orders. Cotton weavers are covering for immediate requirements and underwear manufacturers also are placing some business. Producers do not look for any real pick-up until after the first of the year—or at least, until some decisive news comes regarding prices. The industry is awaiting word from the conference of rayon producers in London, which may throw light on the present unsettled situation. There is considerable talk of a January price cut which has further discouraged orders.

Rayon Waste Weakens

Desire on the part of some rayon waste dealers to write low inventories is pressing them to clear current stocks of waste, and prices have weakened on certain grades. Thread waste is said to be available at 8c., but numerous firms are still holding out for their list price of 11c. The market tone is uncertain and manufacturers show no real desire to buy. No improvement of any size is looked for before the holidays.

Hosiery Curtailment Urged

Shut-Down Plan Considered; Sweaters, Underwear Quiet

THE announcement by a foremost hosiery company selling to retailers that it would cease production for a month to reduce the carry-over stocks for the year, was a chief feature of interest in the hosiery market. Coming simultaneously with a statement by John Wyckoff Mettler, president of the National Association of Hosiery and Underwear Manufacturers, urging curtailment, the news was considered particularly significant. Worth Street factors generally favored the idea of curtailing, but just how effective the force of example and Mr. Mettler's recommendation will be, is debatable. Mr. Mettler's text was that "irrespective of a turn in general business, the hosiery industry will not 'come back' until the mills get their surplus stocks down." There is no question of the timeliness of this appeal to curtail, and any general observance of that policy would do much to help the prospects of hosiery during 1931. This was the view of the best minds in the trade, but past experience has taught them to be skeptical of any trade-wide curtailment recommendation. There are many obstacles to such action, the chief one being a lack of trade consciousness among individual manufacturers. The very small firms hesitate to curtail because of limited resources, and the intermediate mills in many cases are lacking the needed initiative and courage to fall in with that policy.

Surplus a Problem

At present, there is overproduction in all the main hosiery divisions, with sales interest very light. Women's full-fashioned goods moves unevenly, and numerous standard $1.25 numbers are retailing at less than $1. Christmas buying is good at the moment, but the aggregate holiday turnover is decidedly below normal. Men's hosiery is a somewhat similar position; one leading firm was stated to have written only 50% of last year's holiday business. Orders dribble in indifferently, chiefly for numbers retailing at 35c. and 50c. Half-hose producers are carrying heavy stocks into the new year; they do not appear to see the danger of this situation and the prospects for any real curtailment at this end—unless the banks compel such action—are not too good. Here and there one finds mill agents enjoying active business on half-hose and some are sold ahead, but these are negligible compared to the industry as a whole. In view of the above, the need for immediate and general curtailment, is obvious, but the chances are not so bright. One big hope is that some more of the major mills may shut down. However, mills big or small will not shut down as long as they have orders coming in, and they are satisfied to take these orders, even at drastic price concessions; which is the chief obstacle to the whole curtailment plan.

Swimsuits Improve

A slight increase in swimsuit buying brought encouragement to outerwear knitters who found their other lines moving poorly. Winterweight sweaters are slow, due partly to the approach of year-end inventories and partly to the unseasonably mild weather; and this lull has sympathetically affected spring sweaters. The Chicago openings fell on stony ground so far as substantial orders are concerned. Mill agents do not look for much spring sweater movement prior to the first of January.

Underwear Slack

Heavyweight underwear lines, which moved spiritedly for some weeks, are less active, and knitters continue to

blame their poor sales on the mild weather prevailing in the Atlantic States. Spring underwear reflects the backwardness of heavyweights, and very little future business on cottons, balbriggans or rayons was placed this week. Underwear jobbers and retailers are determined to end the year with the lowest possible stocks and price concessions fail to move them. Certain heavyweight underwear mills are in a satisfactory position, having been oversold during November. The market appears resigned to a sluggish December, with a probable improvement in winter lines in January; indications point strongly to a postponement of 1931 heavyweight openings until February.

Statements Show Year's Losses

Exceptional Concerns Have Been Able to Show Balances on Right Side in 1930

AS USUAL in the closing weeks of the year, shares of many textile corporations together with those that have been liquidated, or are in the process of doing so, figured prominently in the Boston stock auctions this week. The sale of 300 shares of Whitman Mills at $6 for the lot was outstanding; other notable sales were 100 New England Southern common at $1 for lot, 120 Ipswich preferred ($55 paid in liquidation) at 5½-5⅝, and 59 Lyman ($220 paid in liquidation) at 59c. per share. Many of these sales are made to establish losses for income tax purposes and cannot be considered as reflecting the general trend of the market for textile securities.

Wamsutta Reports Loss

Wamsutta Mills, fine cotton goods, New Bedford, Mass., reports for the year ended Sept. 30, 1930, a loss of $329,747 after taxes and depreciation. This compares with net profits in 1929 and 1928 fiscal years of $82,037 and $37,215 respectively. While the gross loss seems large, the actual operating loss was limited to $55,000. The company's income account for the last three years compares as follows:

	1930	1929	1928
Gross income	$3,535,325	$4,755,456	$4,201,122
Oper. expenses	3,590,407	4,389,363	3,943,501
Taxes	99,985	109,486	124,543
Depreciation	174,680	174,570	95,863
Loss	329,747	*82,037	*37,215

*Profit.

On Sept. 30, 1930, current assets totaled $2,871,056 and current liabilities $1,405,909, leaving net working capital of $1,465,147 compared with $1,850,172 a year ago.

At the annual meeting of stockholders, Treasurer Charles F. Broughton declared that the outlook for Wamsutta "is better than it has been for two or three years, and any talk of liquidating the plant is ridiculous."

National Fabric Shows Loss

For the year ended Sept. 30, 1930, National Fabric & Finishing Co., operating plants at Lowell, Mass., and St. Louis, Mo., reports net operating loss of $248,084, and total net loss for the year of $560,385. This compares with a net operating profit in 1929 of $75,639 and a total net loss of $348,587. The company's income account for the last two years compares as follows:

	1930	1929
Net sales	$5,685,154	$7,986,922
Cost of sales, etc	5,728,244	7,816,353
Net earnings	*43,090	170,569
Net loss bleachery	204,993	94,931
Net operating profit	*248,084	75,639
Other income	11,462	53,466
Total income	*236,621	129,105
Int., inventory marked down and other deductions	323,764	477,691
Deficit for year	560,385	348,586

*Loss.

Current assets Sept. 30, 1930 amounted to $2,272,768 and current liabilities $307,399, leaving working capital of $1,965,369 as compared with $2,412,754 on Sept. 30, 1929.

Bristol Favors $39 Offer

Directors of the Bristol Mfg. Co., New Bedford, Mass., have recommended to stockholders that they accept the cash offer of $39 per share made by Jerome A. Newman. The letter sent out to stockholders was accompanied by a financial statement for the fiscal year ending Sept. 27, 1930, in which the surplus of quick assets over liabilities is shown to be $463,148, compared with $607,717 a year ago.

The balance sheet for the year ending Sept. 27, 1930, follows:

Assets	
Land	$23,470.86
Buildings	333,279.00
Machinery	1,093,605.44
Merchandise	246,952.53
Investment	137,156.49
Accounts receivable	83,533.37
Cash	26,221.78
Total	$1,944,219.17
Liabilities	
Capital stock	$1,000,000.00
Accounts payable	39,067.87
Depreciation	812,038.54
Taxes	30,715.95
Profit and loss	62,397.11
Total	$1,944,219.47

Plymouth Cordage Profit

For the year ended Sept. 30, 1930, Plymouth Cordage Co., Plymouth, Mass., reports a profit after depreciation and tax reserves of $287,508, equal to 3.55% on combined $8,000,000 capital stock of $100 par value and $108,280 employees' special stock of $10 par. This is after an inventory shrinkage of $2,134,667, met in part by use of an inventory reserve of $949,161, established in the 1929 fiscal year. For the year ended Sept. 30, 1929, company earned $920,823, after setting aside inventory reserve, equal to 11.3% on combined capital and employees' stock. The company's income account for the last two years compares as follows:

	1930	1929
Net sales	$12,849,104	$13,830,233
Oper. profit after deprec	1,512,066	2,195,134
Charges, inc. int	39,052	29,303
Res. for taxes‡	.....	295,846
Inventory adjust*	1,185,506	.....
Cont. res. for inv. adj	.....	949,161
Res. for ex. div. and bonus	.....	162,000
Dividends	486,230	486,404
Net ded. from surp	198,722	†272,420

*Includes use of $949,161 inventory reserve in 1930 and $329,102 in 1928. †Net addition to surplus. ‡Included in "charges" in 1930.

Consolidated Omits Bond Interest

In order to conserve the company's working capital, it is said, the Consolidated Textile Corp. has omitted the semi-annual interest payment, due Dec. 1, on its 20-year, 8% gold bonds.

Kilburn Cash Disbursement

The cash disbursement of $25 to $35 a share to be made by Kilburn Mills, New Bedford, as announced at the recent annual meeting of stockholders will in all probability be made in the form of a reduction in the par value of each share and for tax purposes will be treated the same as a dividend in liquidation, although it has been indicated that it is not their purpose to liquidate.

Lane Cotton Mills

Profits for the quarter ending Sept. 30 were reported by the Lane Cotton Mills Co., New Orleans, at $75,545, as compared with profits of $136,422 for the same quarter of last year. Profits for nine months ending Sept. 30, 1930, were at $361,173 against $454,962 for the same period last year.

Further Recession in South

CHARLOTTE, N. C.—The average bid price of 25 common stocks of southern cotton mills closed for the week ended Nov. 29 at $61.12 per share or a net decline of 68c. per share for the week according to the weekly summary furnished by R. S. Dickson & Co.

Boston Stock Auctions

The following sales of textile shares were made at Wednesday's auctions:

Shrs.	Mill	Par	Price	Change
50	Associated Textile	...	35-36¼	....
100	New England Southern, com.	...	$1 for lot	....
120	Ipswich, pfd.[1]	100	5⅛-5¼	+⅛
55	Lyman[2]	100	59c.	....
100	Dwight	100	2	—⅛
10	Naumkeag	100	84	....
100	Ludlow	100	117½	+½
50	Ayers Woolen	100	5 for lot	....
50	Sharp, com.	100	1 for lot	....
300	Whitman	100	6 for lot	....
7	Lancaster, com	100	10 lor lot	....
25	Harmony, pfd.	100	19¼	—5¼
32	Great Falls	100	1 for lot	....
45	Boston Woven Hose, com.	100	55 ex. div.	—14

1,044 Total

[1]$55 paid in liquidation.
[2]$220 paid in liquidation.

QUOTATIONS

at close of business, Dec. 3, 1930
Prices cover average qualities unless otherwise stated

Cotton Goods

	Dec. 3	Nov. 25	Dec. 4 1929
PRINT CLOTHS			
27 -in., 64x60, 7.60	4¼c.	4¼c.	4¼c.
38½-in., 64x60, 5.35	5¼c.	5¼c.	7c.
39 -in., 68x72, 4.75	6¼c.	6¼c.	8c.
39 -in., 72x76, 4.25	7c.	7c.	8½c.
39 -in., 80x80, 4.00	7½–8c.	7½–8c.	9½c.
BROWN SHEETINGS			
36-in., 56x60, 4.00	6¼c.	6¼–6½c.	8½–8¾c.
36-in., 48x48, 3.00	7¼c.	7¼–7½c.	10½–10¾c.
37-in., 48x48, 4.00	5¼c.	5¼–6c.	7¼–7½c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70	6¼c.	6¼c.	8½–8¾c.
36½-in., 64x60, 5.75	5¼c.	5¼c.	7–7¼c.
MISCELLANEOUS			
Drills, 37-in., 3 yd	7¼c.	7¼c.	10½c.
Denims, 2.20	12½c.	12½c.	16.33c.
Tickings, 8 oz	16 c.	16 c.	20–21c.
Standard prints	7¼c.	7¼c.	9½c.
Eastern staple ginghams, 27-in.	8 c.	8 c.	10 c.

Cotton Waste

Peeler comber	9 — 9½
Peeler strips	7¾ — 8¼
Sak. comber	8½ — 9
Choice willowed fly	4½ — 5
Choice willowed picker	3 — 4½
Sak. strips	11 —12
Linters (mill run)	2½ — 3½
White spooler (single)	7¼ — 8

Cotton Yarn

CARDED (Average Quality)
Double Carded 2c.–4c. higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	$0.20½	22s	$0.23
10s	.20½ – .21	24s	.24½ – .25
12s	– .21	26s	.25½ – .26
16s	.21 – .21½	30s	– .27
20s	– .22	40s ex.qual.	.39 – .40

TWO-PLY SKEINS AND TUBES

8s-2	$0.20½ – .21	26s-2	$0.26
10s-2	– .21	30s-2	– .27
12s-2	.21 – .21½	36s-2	.33 – .34
14s-2	– .21½	40s-2	.34 – .35
16s-2	.21½ – .22	40s-2 hi. brk.	.38 – .39
20s-2	.22 – .22½	50s-2	.43 – .44
24s-2	– .25	60s-2	.53 – .54

SINGLE WARP

10s	$0.20½	24s	$0.24½ – .25
12s	– .21	26s	.25½ – .26
14s	– .21½	30s	.27 – .27½
16s	.21½ – .22	40s e.c. qual.	.39 – .40
20s	.22 – .23		

TWO-PLY WARPS

8s-2	$0.21	24s-2	$0.25 – .25½
10s-2	.21 – .21½	26s-2	– .26
12s-2	– .21½	30s-2	.27 – .27½
14s-2	.21½ – .22	40s-2 ordin.	.35 – .36
16s-2	– .22	50s-2	– .45
20s-2	.22 – .22½	60s-2	– .54

8s-3 and 4-ply skeins and tubes; tinged, 18–18½; white, 19½–20; waste 17–17½

HOSIERY CONES (Frame Spun)

8s	$0.19½ – .20	22s	$0.23½
10s	.20 – .20½	24s	– .24
12s	.20½ – .21	26s	– .24½
14s	.21 – .21½	30s tying	.26½ – .27
16s	.21½ – .22	30s reg.	– .28
18s	.22 – .22½	30s ex. qual.	– .30½
20s	.22½ – .23	40s	.36 – .37

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

29s-2	$0.35 – .36	60s-2	$0.55½ – .56½
30s-2	.40 – .41	70s-2	.65½ – .66½
36s-2	.41 – .42	80s-2	.78½ – .80
40s-2	.43 – .44	90s-2	.94 – .95
50s-2	.48 – .49	100s-2	1.16 –1.20

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2	$0.36 – .37	60s-2	$0.56½ – .57½
30s-2	.41 – .42	70s-2	.67½ – .69
36s-2	.42 – .43	80s-2	.79 – .80
40s-2	.44 – .45	90s-2	.97 –1.00
50s-2	.49 – .50	100s-2	1.20 –1.25

SINGLES

12s	$0.28½ – .29	30s	$0.38½ – .39
14s	.29 – .29½	38s	.41½ – .42
16s	.29½ – .30	40s	.42½ – .43
18s	.30 – .30½	50s	.47½ – .48
20s	.31 – .31½	60s	– .55
24s	.33½ – .34	70s	– .65
28s	.37 – .37½	80s	.77 – .78

MERCERIZED CONES—(Combed, Ungassed)

26s-2	$0.50 – .51	90s-2	$1.29 –1.32
30s-2	.52 – .53	100s-2	1.59 –1.61
36s-2	.55 – .56	120s-2	1.98 –2.05
40s-2	.58 – .59	30s	.63 – .65
45s-2	.60 – .61	40s	.68 – .70
50s-2	.62 – .64	50s	.75 – .77
60s-2	.70 – .72	60s	.83 – .85
70s-2	.82 – .84	70s	.95 – .97
80s-2	.94 – .98	80s	1.17 –1.19

Cotton Prices and Statistics

FLUCTUATIONS OF FUTURES

	Closed Nov. 26	For Week High	For Week Low	Closed Dec. 3	Net Chge.
December	10.61	10.68	10.26	10.31	—30
January	10.84	10.84	10.38	10.41	—43
February	10.98	10.98	10.53	10.53	—45
March	11.10	11.10	10.62	10.68	—42
April	11.22	11.22	10.78	10.78	—44
May	11.31	11.32	10.85	10.92	—39
June	11.41	11.41	10.98	10.98	—43
July	11.45	11.51	11.03	11.09	—36
August	11.50	11.50	11.13	11.13	—37
September	11.54	11.54	11.19	11.19	—35
October		11.63	11.22	10.27	

SPOT FLUCTUATIONS FOR WEEK

(Middling)

	New York	New Orleans	Liverpool
Friday, Nov. 28	10.55	10.22	5.91
Saturday, Nov. 29	10.55	10.22	5.79
Monday, Dec. 1	10.40	10.15	5.78
Tuesday, Dec. 2	10.60	10.30	5.66
Wednesday, Dec. 3	10.40	10.11	5.75
Thursday, Dec. 4	10.45	10.11	5.70

FOREIGN COTTONS

Egyptian Cotton

Alexandria Exchange, Dec. 3 — Change

January Sak	15 62	—1.32
December uppers	10.97	—0.64

Dec.-Jan. Shipment c. i. f. Boston.

(Tariff not included)

Fully good fair Sak	19.00
Fully good fair to good Uppers	13.50

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cents
Peruvian Tanguis Strict Middling	21½
Peruvian Pima No. 1	23½
Peruvian Moderate Rough	17½
Peruvian Full Rough	22
China Tientsin No. 1	10.75
India Rough	8½ to 11
India Smooth	8½ to 11

(By Gerald G. Loeb, New York.)

BASIS MIDDLING

	Saturday, Nov. 29	Saturday, Nov. 22
10 markets average	9.88	10.16
Memphis	9.35	9.55

PREMIUM STAPLES

First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices Steady
1⅛-in.	12.15—12.35c.
1 3/16-in.	13.60—13.85c.
1¼-in.	18.25—18.60c.

CURRENT SALES

	For Week	Prev. Week	Week Before
Memphis total	20,458	31,335	35,961
F.o.b. included in total	19,118	25,444	30,036
10 markets	123,006	168,744	195,247

MEMPHIS RECEIPTS, SHIPMENTS, ETC.

	For Week	Last Year	Year Before
Net receipts	30,377	21,994	34,196
Gross receipts	55,506	53,434	61,495
Total since Aug. 1, net	439,055	561,596	391,035
Shipments	42,261	47,970	52,398
Total since Aug. 1	490,247	717,267	592,140
Total stock	386,538	383,390	226,640
Decrease for week	13,245	5,464	9,097
Unsold stock in hands of Memphis factors	74,227	63,628	
Decrease for week	1,214	*3,598	

*Increase.

AVERAGE PRICE DECEMBER SHIPMENT HARD WESTERN COTTON

F. o. b. New England

	Middling	St. Middling
1 1/16 in.	12½–13c.	13 –13½c.
1⅛ in.	13½–14c.	14 –14½c.
1 3/16 in.	14½–15½c.	15½–16½c.
1¼ in.	19 –22c.	20 –23c.

Basis on New York, New January 10.41c.

SPOT FLUCTUATIONS AND STOCKS

Market	Middling Nov. 25	Middling Dec. 3	Sales	Stocks This Week	Stocks Last Year
Galveston	10.55	10.15	3,171	679,170	516,013
New Orleans	10.47	10.11	21,437	748,026	519,667
Mobile	10.00	9.70	3,612	167,872	57,856
Savannah	10.32	9.92	1,262	288,138	82,990
Norfolk	10.50	10.13	1,292	94,700	69,924
New York	10.80	10.40	1,546	231,791	98,849
Augusta	10.13	9.75	2,069	147,059	107,085
Memphis	9.45	9.15	17,458	392,740	384,313
St. Louis	9.25	9.25	.....	8,364	7,275
Houston	10.50	10.10	27,599	1,499,569	1,075,881
Dallas	9.95	9.55	27,658	43,346	9,594

DIFFERENCES ON AND OFF MIDDLING

WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M. F	.75†	1.00†	.85†	.75†	0.89†
S. G. M	.60†	.75†	.75†	.63†	.70†
G. M	.50†	.50†	.60†	.50†	.51†
S. M	.35†	.25†	.35†	.25†	.30†
S. L. M	.75*	.75*	.65*	.50*	.69*
L. M	1.50*	1.75*	1.50*	2.25*	1.60*
S. G. O.**	2.50*	2.75*	2.50*	3.50*	2.56*
G. O	3.50*	4.00*	3.50*	4.50*	3.55*

YELLOW TINGED

G. M	0.50*	0.75*	0.50*	0.50*	0.58*
S. M	1.00*	1.25*	1.00*	1.00*	1.05*
M.**	1.75*	2.00*	1.50*	1.50*	1.68*
S. L. M	2.50*	2.75*	2.25*	2.25*	2.37*
L. M.**	3.50*	4.00*	3.00*	3.00*	3.30

YELLOW STAINED

G. M	1.50*	1.75*	1.50*	1.50*	1.58*
S. M.**	2.25*	2.50*	2.50*	2.50*	2.40*
M.**	3.00*	3.25*	3.50*	3.50*	3.23*

BLUE STAINED

G. M.**	1.75*	2.00*	1.75*	1.75*	1.78*
S. M.**	2.25*	2.75*	2.75*	2.75*	2.48*
M.**	3.00*	3.25*	3.75*	3.75*	3.28*

**Grades not deliverable on contract. †On Middling
*Off Middling.

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne..	$0.30 –$0.31	⅜ blood.....	$0.28 –$0.29
Fine clthg ..	.24 – .25	¼ blood.....	.28 – .29
⅛ blood.....	.29 – .30		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.71 –$0.73
California, Northern	.61 – .63

PULLED– EASTERN (CLEAN BASIS)

A.A.	$0.70 –$0.73	B-Super...	$0.48 –$0.55
A-Super....	.61 – .63	C-Super...	.43 – .45

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.72 –$0.75
Staple ½ bld.	.68 – .70
Fine and fine medium	.68 – .70
¾ blood	.58 – .60
½ blood	.55 – .57

MOHAIR—DOMESTIC

Best Carding	$0.32 –$0.35
Best combing	.45 – .48

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.21 –$0.23
Cape firsts	.23 – .25

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
70s	$0.63 –$0.65
64s	.48 – .50
58s-60s	.42 – .45

(IN GREASE)

Montevideo:	
58s-60s	$0.20 –$0.21
56s	.19 – .20
50s	.18 – .19
Buenos Aires:	
4s, 40-44s	$0.13 –$0.14
5s, 36-40s	.11 – .12

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo	$0.25 –$0.26
China: Combing No. 1	.14½– .15
China Filling Fleece	.13 – .14
Szechuen ass't	.14 .14½
Cordova	.13 – .14
Scotch black face	.14 – .15
East India: Kandahar	.20 – .22
Vican'r	.24 – .26
Joria	.23 – .25

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.87½– .90
2-24s 40s	.97½–1.00
2-26s 44s	1.05 –1.07½
2-28s 46s	1.10 –1.12½
2-30s 48s	1.15 –1.17½
2-32s 50s	1.20 –1.25

(Single yarns 5c. less than above)

2-36s, 58s	$1.32½–1.35
2-40s, 60s	1.40 –1.45
2-40s, 64s	1.45 –1.50
2-50s, 66s	1.60 –1.65
2-60s, 70s	1.97½–2.00

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.87½– .90
2-20s, 48s in oil	– .95
2-20s, 50s in oil	.97½–1.00
2-20s, 56s in oil	1.07½–1.10
2-20s, 60s in oil	–1.27½
2-20s, 64s in oil	1.32 –1.35
1-15s, 46s dyed	1.10 –1.12½
1-15s, 48s dyed	1.12½–1.15
1-15s, 50s dyed	1.15 –1.17

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	$1.15 –$1.17½
1-20s, 60s	1.20 – 1.22½
1-18s, 64s, Dyed	1.50 – 1.52½
1-26s, 64s	1.25½– 1.27½
1-30s, 60s, Warp	1.30 – 1.32½
1-30s, 64s, Warp	1.35 – 1.37½
2-30s, 64s, Fancy mixes	1.65 – 1.67½
2-40s, 64s, Zephyrs	– 1.55
1-50s, 66s	1.60 – 1.62½
2-50s, 66s	1.75 – 1.80
1-60s, 70s	1.95 – 1.97½
2-60s, 70s	2.10 – 2.15

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$1.02½–$1.05
1-40s, 50-50-60s on cops	1.15 – 1.17½
1-40s, 50-50-64s on cops	1.17½– 1.20
1-40s, 50-50-64s Australian cops	1.25 – 1.30

Underwear mixes, 3c. additional.
Solid color, 35c. additional.

◆

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.95–$0.97
Half-blood (60-62s)	.88– .90
High ¾ blood (58s)	.80– .82
Aver. ¾ blood (56s)	.78– .80
Low ¾ blood	.73– .75
High ¼ blood (50s)	.70– .72
46s S. A. and N. Z.	.60– .63
44s S. A. and N. Z.	.58– .60
40s S. A. and N. Z.	.58– .60

TOPS—BRADFORD, ENG. (NOV. 29)

Fine (70s)	28½d	¾ bld. (56s)	15½d
Fine (64s)	24½d	½ bld. (50s)	13 d
½ bld. (60s)	22 d	Cross-bred (46s)	10½d
⅜ bld. low (58s)	19 d		

NOILS—BOSTON

Fine	$0.51–$0.53	High ½ bld.	$0.42–$0.45
Half-bld.	.48– .52	Low noils	.35– .38
Aver. ¾ bld.	.45– .48	Medium colored	.35– .37
Fine colored.	.43– .45		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.73 –$0.75
Lap, fine colored	.56 – .58
Hard ends, fine white	.58 – .60
Hard ends, ½ blood white	.38 – .40
Hard ends, fine colored	.23 – .25
Hard ends, medium colored	.18 – .20
Card, fine white	.28 – .30
Burr, fine Carbonizing	.33 – .35

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, Coarse Light	$0.06 –$0.07
Merinos, Fine Dark	.04½– .05
Merinos, Fine Light	.13 – .13½
Serges, Blue	.06½– .07
Serges, Black	.07 – .07½
Serges, Red	.10½– .11
Knit, White	.22 – .23
Knit, red	.15 – .16
Knit, Light Hoods	.14 – .15
Worsted, Light	.05½– .06
Worsted, Blue	.07 – .07½
Worsted, Black	.07 – .07½

Silk Yarns

THROWN SILK (60 day basis)

	Nominal
Japan organzine, 2 thd. spec. gd. XX. sk. 85%	$3.90
Japan organzine, 2 thd. sp. crack. sk. 81%	3.55
Japan crepe, 3 thd. gd. XX bob. 83%	3.85
Japan crepe, 3 thd. sp. crack. bob. 81%	3.80
Japan crepe, 4 thd. crack bobbins, 78%	3.70
Japan grenadine, 4 thd. sp. grand singles, 87%	5.85
Japan grenadine 4 thd. 85%	5.50
Japan grenadine 3 thd. 90%	6.90
Canton crepe, 3 and 4 thd. ns. 14/16 on bobbins	2.85
Hosiery tram, 3 thd. Japan 90%	4.90
Hosiery tram, 5 thd. Japan, 85%	3.95
Hosiery tram, crack XX 78%	3.00

SPUN SILK YARNS (Terms: net 30)

40/2	$3.35	60/2	$3.65
50/2	3.55	62/1	2.50

Raw Silk

(60 day basis)
Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 86/88%	$3.80	$2.80	$2.80
Special Grand, 85%	3.20	2.70	2.70
Grand XX, 83%	2.90	2.55	2.55
Special Crack, 81%	2.60	2.50	2.50
Crack XX, 78%	2.50	2.45	2.45
Extra Extra, 73%	2 40	2.35	2.35
Best Extra, 68%	2.35	2.25	2.25

Canton filature, new style, 14/16	$1.85
Canton filature, new style, 20/22	1.70
Tussah filature, 8 cocoon	1.15

NATIONAL RAW SILK EXCHANGE

	Close Nov. 25	For the Week High	For the Week Low	Close Dec. 2	Net Chge.
December	2.35	2.35	2.26	2.34	—.01
January	2.31	2.35	2.26	2.32	+.01
February	2.31	2.36	2.25	2.32	+.01
March	2.31	2.33	2.25	2.32	+.01
April	2.31	2.32	2.24	2.29	—.02
May	2.31	2.31	2.25	2.28	—.03
June	2.30	2.30	2.25	2.26	—.04
July	2.29	2.30	2.24	2.25	—.04

Total contracts, 335. Total number of bales, 3,350
Total approximate value, $8,375.00. Trading unit is Crack XX 13-15, white 78%.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First	Second
50	14	$2.15	$1.95
75	18	1.60	1.50
75	30	1.70	1.60
100	18	1.25	1.15
100	40	1.30	1.20
125	36–50	1.20	1.10
150	24–30	.95	.90
150	36–40	1.00	.95
150	60	1.15	1.10
150	75–90	1.20	1.15
170	24–27	.95	.90
170	60	1.15	1.10
200	30	.90	.85
200	35–40	.90	.85
200	75–80	1.10	1.05
300	44–60	.78	.75
450	54–60	.78	.75
600	72–96	.78	.75
900	100–144	.78	.75

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.60	$1.50	150	$0.95	$0.90
100	1.25	1.15	175	.95	.90
125	1.20	1.10			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	65	45	$2.00
25	24	2.85	80	60	1.70
30	24	2.60	100	75	1.40
40	30	2.40	120	90	1.30
52	30	2.20	150	112	1.25
			180	135	1.10

ACETATE PROCESS

Denier	Price	Denier	Price
45	$2.25 2.75	120	$1.90
55	2.05–2.55	140	1.30
65	2.45	150	1.40–1.85
75	1.80–2 70	200	1.55
100	1.65–2.45	300	1.50

Rayon Waste

Prices Nominal

Open bleached waste	–$0.15
Open unbleached waste	–.13
Bleached thread waste (mfs.)	–.09
Bleached thread waste (misc.)	–.09
Colored thread waste	–.08
Colored clips	–.07

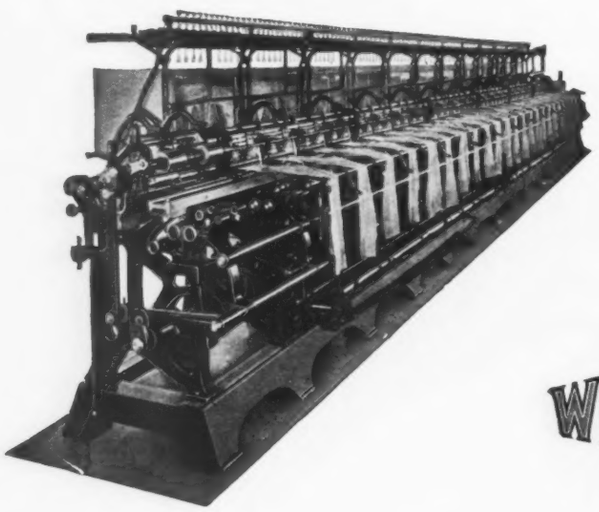
CONVERTED RAYON WASTE

Bleached tops	–$0.45
Unbleached tops	–.40
Bleached noils	–.15
Bleached garnetts	–.16
Unbleached garnetts	–.15
Colored garnetts	–.13

Silk Waste

Kibizzo Kakai Grand XX	$0.54
Kibizzo Kakai Triple Extra	.48
Frison Grand Double	.52½
Pierced Cocoons	.53

BUILT WITH A FOUNDATION WHICH OFFSETS VIBRATION



A statue built to withstand the constant vibration of the city must have a substantial foundation.

The extra-heavy foundation of the Wildman Full-Fashioned Hosiery Machine is for the same purpose. It eliminates vibration and its dangers.

Another outstanding feature of the new Wildman Machine is the new stop-motion mechanism which a child could operate by the mere touch of a lever.

Write for further information.

WILDMAN MFG. CO.
Full-Fashioned Division
NORRISTOWN, PA.

WILDMAN
THE WORLD'S STANDARD

WILDMAN
FULL-FASHIONED HOSIERY MACHINE

Southern Mill Securities

(A. M. Law & Co., Spartanburg)

	Bid	Asked
Abbeville Cotton Mills	..	50
Anderson Cotton Mills	60	65
Arcade Cotton Mills	..	50
Arcadia Mills	..	200
Arcadia Mills, pfd	85	90
Arkwright Mills	..	50
Augusta Factory, Ga	..	20
Avondale Mills, Ala	700	900
Beaumont Mfg. Co	200	250
Beaumont Mfg. Co. 7% pfd	95	100
Belton Mills	..	20
Belton Mills, pfd	60	65
Bibb Mfg. Co	86	90
Bibb Mfg. Co. 6% pfd	95	100
Brandon Corp., A	..	40
Brandon Corp., B	..	6
Brandon Corp., pfd	..	75
Calhoun Mills	..	90
Chadwick-Hoskins Co. (par, $25)	7	9
Chesnee Mills	..	45
Chiquola Mfg. Co	..	210
Chiquola Mfg. Co., pfd	84	88
Clifton Mfg. Co	88	92
Clinton Cotton Mills	..	225
Columbus Mfg. Co., Ga	55	65
Cowpens Mills	..	25
D.E. Converse Co	..	85
Dallas Mfg. Co., Ala	35	50
Darlington Mfg. Co	..	50
Drayton Mills	70	..
Dunean Mills	100	110
Dunean Mills, pfd	92	97
Eagle & Phoenix Mills, Ga	..	60
Easley Cotton Mills, pfd	..	35
Enterprise Mfg. Co., Ga	..	100
Fairforest; Finishing Co., serial notes	95	100
Florence Mills	40	45
Florence Mills, Pfd	97	100
Gaffney Mfg. Co	..	20
Gainesville Cotton Mills, Ga	..	130
Glenwood Mills	85	95
Gluck Mills	60	67
Gossett Mills	..	50
Graniteville Mfg. Co	..	95
Greenwood Cotton Mills	500	..
Grendel Mills, pfd. (par, $50)	40	45
Hamrick Mills	..	90
Hartsville Cotton Mills	125	135
Hunter Mfg. & Com. Co., pfd	67	72
Industrial Cotton Mills Co., pfd	..	30
Inman Mills	100	120
Inman Mills, pfd	95	100
Judson Mills, A, pfd	90	95
Judson Mills, B, pfd	88	93
King, John P. Mfg. Co., Ga	80	90
Lancaster Cotton Mills	225	..
Laurens Cotton Mills	..	110
Limestone Cotton Mills	..	90
Lydia Cotton Mills, serial notes	94	100
Marion Mfg. Co., N. C	..	100
Marlboro Mills	..	15
Mills Mill, pfd	80	90
Mollohon Mfg. Co., pfd	90	100
Monarch Mills	..	85
Musgrove Cotton Mills	..	20
Newberry Cotton Mills	95	102
Ninety-six Mills	400	..
Norris Cotton Mills	..	40
Orr Cotton Mills	..	55
Orr Cotton Mills, pfd	60	65
Pacolet Mfg. Co	..	100
Pacolet Mfg. Co., pfd	..	80
Panola Cotton Mills, Class A, pfd. (par, $60)	45	50
Pickens Cotton Mills	105	115
Piedmont Mfg. Co	..	100
Piedmont Print Works (no par)	..	10
Piedmont Print Works, pfd	..	60
Poe, F. W. Mfg. Co	19	22
Riverside & Dan River Mills	9	10
Riverside & Dan River Mills, 6% pfd	55	65
Saxon Mills	..	50
Sibley Mfg. Co., Ga	50	60
Southern Bleachery	..	20
Southern Bleachery, pfd	..	70
Southern Bleachery, serial notes	95	100
Southern Franklin Process	18	22
Southern Franklin Process, pfd	95	100
Southern Worsted Corp., pfd	70	80
Spartan Mills	..	125
Spencer Corp., serial notes	95	100
Union-Buffalo Mills	..	30
Union-Buffalo Mills, 1st pfd	69	73
Union Buffalo Mills, 2nd pfd	..	40
Victor-Monaghan Co	51	56
Victor-Monaghan Co., pfd	105	110
Wallace Mfg. Co	..	100
Ware Shoals Mfg. Co	120	130
Whitney Mfg. Co	..	20
Woodside Cotton Mills Co	..	30
Woodside Cotton Mills, pfd	..	35
Yarns Corp. of America, gold bonds	95	100

New England Textile Stocks

Quotations at "Public Sale" are based on last sales at Boston Public Auctions and Boston Stock Exchange. Bid and Asked prices are latest quotations of dealers.

	Sale	Bid	Asked
Am. Mfg. Co	50	52	56
Amoskeag	8	...	....
Arlington	18⅜	18	19
Associated Textile	36½	34	37
Bates	64	64	66
Berkshire, Associates, com	8¼	8½	9¼
Berkshire Associates, pfd	72	...	53
Bigelow-Sanford, com	34	...	...
Boott Mills	120½	108	112
Edwards	80½	63	65
Esmond, pfd	102	96	99
Farr Alpaca	70½	67	69
Hamilton Woolen	40	30	35
Hill	18	14	18
Indian Orchard	20½	20	25
Ludlow	117½	117	120
Merrimack, com	45½	41	44
Nashua, com	12½	15	19
Nashua, pfd	66	56	60
Naumkeag	84	81	84
Newmarket	15	14	18
Otis	43	28½	...
Pacific	17	...	...
Pepperell	85	83	86
Plymouth Cordage	66	67	70
York	8¼	6	8

Textile Calendar

Style Show under auspices of Wool Institute, Hotel Statler, Boston, Mass., Dec. 8, 1930.

The Textile Forum, N.A.C.M., overseers of spinning, Boston (Mass.) Chamber of Commerce, Dec. 9, 1930.

Commission Throwsters Division, Silk Association of America, Annual Meeting, Advertising Club, New York, Dec. 9, 1930.

Cotton Mfrs. Assn. of Georgia, Third Annual Industrial Relations Conference, Atlanta-Biltmore Hotel, Atlanta, Ga., Dec. 12, 1930.

Textile Converters Association, Annual Meeting, Hotel Pennsylvania, New York, Dec. 16, 1930.

Southern Textile Association, Dyers', Bleachers' and Finishers' Division, Regular Meeting, Hotel Charlotte, Charlotte, N. C., Jan. 10, 1931.

The Textile Forum, N.A.C.M., master mechanics, Boston (Mass.) Chamber of Commerce, Jan. 13, 1931.

Silk Association of America, Annual Dinner, New York, Jan. 15, 1931.

The Wool Institute, Annual Meeting, New York, latter part of January, 1931.

The Textile Forum, N.A.C.M., warp preparation and weaving, Boston (Mass.) Chamber of Commerce, Feb. 10, 1931.

The Textile Forum, N.A.C.M., overseers of finishing, Boston (Mass.) Chamber of Commerce, March 10, 1931.

Knitting Arts Exhibition, Commercial Museum, Phiadelphia, April 13 to 17, 1931.

Exposition of Chemical Industries, Grand Central Palace, New York, May 4 to 9, 1931.

American Cotton Manufacturers Association, Thirty-fifth Annual Convention, Hotel Traymore, Atlantic City, N. J., May 21 to 23, 1931.

Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended Dec. 3.

	High	Low	Last Sale	Net Chge.
Adams Millis	22⅜	22¼	22¼	+ ⅛
*American Thread, pfd	3	3	3	— ¼
American Woolen	7⅛	6	7⅛	+1⅛
American Woolen, pfd	22¼	17¼	20¼	+1½
*Assoc. Rayon, pfd	44	39	39	—6
Belding-Hemingway	3½	3¼	3¾	+ ¼
Botany Mills, A	3¼	3	3	....
Cannon Mills	20	19¼	20	+ ⅛
Century Ribbon	3⅞	3⅞	3⅞	— ⅛
Collins & Aikman	16½	14⅛	15⅛	— ⅜
Consolidated Textile	⅜	⅜	⅜	— ⅛
Duplan Silk	14¼	14¼	14¼	....
*Fabrics Finishing	⅜	⅜	⅜	— ⅛
Gotham Hosiery	7⅛	6⅛	6⅞	— ¼
Industrial Rayon	60	53	53	—9
Kayser, Julius	18	16⅛	16⅝	—1⅜
Kendall, pfd	38	36	36	— 2
Mallinson	3¾	3¼	3⅜	+ ⅛
Mohawk Carpet	12	11⅛	11½	— ½
Munsingwear	33	33	33	....
Pacific Mills	17½	17	17	—2½
*Pepperell	84	84	84	+ ¾
*Powdrell & Alexander	...	...	...	....
*Propper-McCallum	4	4	4	— ¾
Real Silk Hosiery	35½	33½	33½	—2½
*Tubize Chat B	7	5½	5⅝	+ ⅛
United Piece Dye Works	25⅜	23¼	23¼	—1⅜

*Listed on Curb.

Fall River Mill Stocks

(G. M. Haffards & Co., Fall River)

	Bid	Asked
Algonquin Printing Co	300	320
Barnard Mfg. Co	..	10
Berkshire (com.)	7½	9
Berkshire (pfd.)	..	55
Bourne Mills	10½	12
Border City Mfg. Co	3	..
Charlton Mills	..	50
Cornell Mills	..	..
Davol Mills	..	5
Flint Mills	45	..
King Philip Mills	3	..
Laurel Lake Mills (com.)	..	10
Luther Mfg. Co	..	85
Merchants Mfg. Co	20	..
Narragansett Mills	..	5
Osborne Mills, Inc	..	5
Pepperell Mfg	83	85
Pilgrim Mills	28	..
Richard Borden Mfg. Co	..	3
Sagamore Mfg. Co	60	..
Shove Mills	..	5
Stevens Mfg. Co	28	..
Union Cotton Mfg. Co	17	..
Weetamoe Mills	..	1

N. Carolina Mill Stocks

(R. S. Dickson & Co., Charlotte, N. C.)

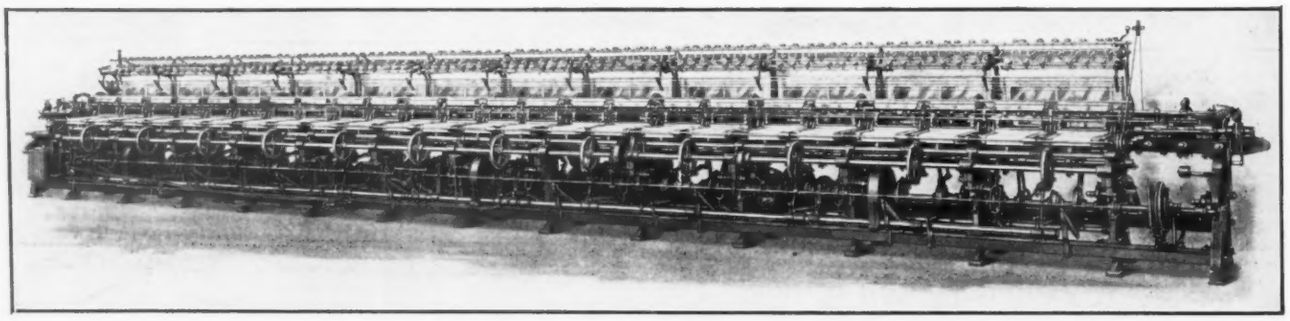
	Bid	Asked
Acme Spinning Co	60	75
American Yarn & Processing Co	..	71
Chadwick-Hoskins Co. (Par $25)	7	10
Chadwick-Hoskins Co., 8%, pfd	90	96
China Grove Cotton Mills	80	90
Climax Spinning Co	50	65
Clover Mills	..	25
Converse, D. E. Co	78	83
Crescent Spinning Co	48	55
Dixon Mills	90	98
Durham Hosiery, 6%, pfd	21	26
Eagle Yarn Mills	50	63
Efird Mfg. Co	60	80
Erwin Cotton Mills	..	114
Erwin Cotton Mills Co., 6%, pfd	80	95
Flint Mfg. Co	80	90
Flint Mfg. Co., 7%, pfd	90	92
Globe Yarn Mills (N. C.)	..	16
Gray Mfg. Co	..	75
Hanes, P. H. Knitting Co	7	10
Hanes, P. H. Knitting Co., 7%, pfd	90	96
Henrietta Mills, 7%, pfd	40	55
Imperial Yarn Mills	..	60
Linford Mills	60	71
Locke Cotton Mills Co	40	55
Majestic Mfg. Co	100	120
Mansfield Mills	..	60
Mooresville Cotton Mills	..	6
Mooresville Cotton Mills, 7%, prior	..	78
Myers Mills	..	55
Myrtle Mills	..	51
National Yarn Mill	50	60
Perfection Spinning Co	50	66
Ranlo Mfg. Co	..	110
Roanoke Mills	..	60
Rosemary Mfg. Co., pfd., 7½%	93	100
Rowan Cotton Mills Co	60	74
Seminole Cotton Mills Co	..	70
Sterling Spinning Co	50	65
Stowe Spinning Co	50	61
Victory Yarn Mills Co	30	50
Ware Shoals Mfg. Co	115	125
Ware Shoals Mfg. Co., 7%, pfd	90	98
Winget Yarn Mills Co	33	50
Wiscassett Mills Co	155	180

Out of Date
means Out of Line
for hosiery manufacturers

Ten years ago, fifteen years ago, full-fashioned machines were in competition only with machines of similar age and equal capacity. Today, this older equipment must try to keep pace with *modern* machines, which have the advantage from every angle . . . size, speed, quality of production, low maintenance costs.

The pace is faster now, the competition is keener, and profits are harder to earn. Mills operating obsolete machines are hopelessly outclassed in every market, even in the very lowest. *Modernization* is the order of the day, and now, while business conditions permit it, is the time to install machinery which shows immediate and lasting profit.

TEXTILE MACHINE WORKS
Reading, Penna.



The Reading Full-Fashioned Knitting Machine as it stands today—after 32 years of development—is the lowest priced, highest producer ever offered.

Tariff Central Topic at Annual Meeting of Canadian Association

"IT IS with satisfaction that I am able to report that information is beginning to come in from different sections of the country of full operation, increased employment, larger pay rolls, starting up idle machinery and of the establishment of new ventures with new capital although the legislation which caused this change was passed by Parliament only 10 weeks ago and is not fully in effect even today."

It was with this message that David C. Dick, of Cobourg, president of the Canadian Woolen and Knit Goods Manufacturers' Association, faced the twelfth annual meeting of that body in the Royal York Hotel, Toronto, Nov. 27. President's address featured the morning session while Sir Joseph Flavelle, chairman of the Canadian Bank of Commerce, and president of the Ontario Research Foundation, was the principal speaker at the midday luncheon when more than 130 representatives of the industry were seated.

"The tariff has not been increased only to make the manufacturers' business safer and more profitable, but mainly for the general benefit of the whole country," said Sir Joseph Flavelle,

He indicated the likelihood of more favorable operating conditions for the textile industries. "You have been stout of heart through hungry years, and have won respect for your persistence in carrying on, notwithstanding discouraging returns for your efforts," he said.

There are now 273 mills in the Dominion, capitalized at $69,573,359, and paying wages and salaries totaling $18,420,415 annually to 22,547 employees.

M. B. HOLTEN ELECTED PRESIDENT

M. B. Holten, treasurer of Chipman-Holten Knitting Co., Hamilton, Ontario, was elected president of the association, with C. M. Heddie, Oakville, as vice-president for the coming year, and past-president David C. Dick, Cobourg, chairman of the tariff committee.

In the course of Mr. Dick's presidential address he pointed to the materially changed condition within the industry during the year. "It is safe to say," he stated, "that these changes have beneficially affected the prospect of mill workers, have widened the opportunities for executive and technical men, and have improved the position of those supplying capital to the Canadian textile industry."

The president concluded that, recent tariff action notwithstanding, "We have seen no sign of increased prices, and many instances have come to our notice where prices have already been reduced. The reaction of any protected industry to price is of deep interest to the people of Canada. I believe the final judgment will be largely influenced by our ability to produce satisfactory goods and give good service at reasonable prices. An appeal has been made over the last decade, and longer that the people of Canada should take our great industry into its consideration and confidence. The people have done so, and we will not betray that confidence."

Among the other speakers to deliver brief addresses of constructive optimism concerning the future of the Canadian textile industry were: H. G. Smith, Hamilton; D. N. Panabaker, Hespelar; George A. Dobbie, Galt; C. G. Cockshutt, Brantford, and J. A. Burns, Dunville, all former presidents of the association.

Analysis of Tuck-Stitch Patterns

(Continued from page 63)

feeds, since each alternate course is plain knitting, and (2) the number of feeds must divide evenly into 18, since 18 is the height of the design. Six and two are the only numbers which meet these conditions. Two can be eliminated because of the fact that the elevation shows six courses. This leaves six as the only remaining number; hence it follows that the feeds used for this pattern are unquestionably six.

There is one more important item to be found, and that is the number of needles required in the cylinder. But before the question of needles is taken up, let us sum up the results established this far in the discussion:

Gauge, 28.
  Total width, 60 wales.
  Width of each division, 20 wales.
  Number of divisions, 3.
Total height, 18.
  Elevation, 6 courses (upward to right).
  Number of feeds, 6 (3 knit feeds, 3 tuck feeds).

In regard to the needle calculations, it has been previously noted that there is a lap of one division. Therefore the number of needles in the cylinder must divide by 60 with a remainder of 20 (one division). As the design runs upward and to the right on the face, the remainder should be a plus 20, thus giving the presser a chance to gain 20 needles on the cylinder at each revolution. It must be kept in mind that the back of the cloth is on the outside while it is being knit and the diagonal of the pattern appears upward to the *left* on the back.

The number of needles of course depends upon the size of cylinder to be used; but whatever the cylinder, the number of needles contained therein must divide by 60 with 20 left over. Suppose, for a sample calculation, the theoretically correct number of needles in a 20-inch cylinder on 28-gauge were 1156.

1156 ÷ 60 = 19, with a remainder of 16.

The remainder must be 20; and, as it is possible to change a few leads in actual practice, a change to 1160 would be permissible and would give the desired remainder. Therefore,

1160 ÷ 60 = 19, with a remainder of 20.

Other calculations which prove the foregoing results are:

Total width of design ÷ Width of division = No. of divisions.
60 ÷ 20 = 3 divisions.
Divisions in design × Courses elevation or feeds = Total height of design.
3 × 6 = 18 courses, height of design.

In conclusion, it can be said of the sample in question that to knit this design on a 20-in. cylinder, 28 gauge, a total number of needles of 1160 should be used with six feeds, three feeds with plain pressers alternated with three feeds with cut pressers, the pressers containing 60 (or a multiple thereof) deep and shallow cuts according to the layout of the stitches in the design.

Cheney Plan Visualizes Fabric in Dress

With the aim of stimulating consumer demand for silk piece goods for home dress-making, Cheney Bros. on Tuesday announced that they had established a new service to enable women purchasers of broadgoods to visualize how silk would actually appear when made into a dress. The new plan, called the Cheney "fabric-into-fashion service" provides that every Cheney print fabric bought by the retailer be reproduced in color in a pattern sketch, by one of the standard pattern houses. These sketches are enclosed in a portfolio and mounted and sent to stores for use of the salesperson. The sketches also are available in frames for counter or aisle displays. The number of the pattern is given and the woman who likes a print but cannot decide whether she would like it when actually made into a dress, finds her problem simplified by these illustrations which show the fabric already made up in one of the season's popular models.

The new service was demonstrated to the trade at Cheney Bros. showrooms last Tuesday.

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Nov. 29, based upon data compiled by the Market News Service of the Bureau of Agricultural Economics, Department of Agriculture, follow:

	Week Ended Nov. 29	Total to Date 1930	Total to Date 1929
Domestic	210,000	339,501,000	203,613,000
Foreign	524,000	57,350,000	91,905,000
Total	734,000	396,851,000	295,518,000
IMPORTS AT PRINCIPAL PORTS			
Boston	524,000	57,350,000	91,905,000
Philadelphia	482,000	41,188,000	83,339,000
New York	1,419,000	42,029,000	69,630,000
Total	2,425,000	140,567,000	244,874,000

Viscose Co. to Move New York Office

It was announced Wednesday that the New York offices of the Viscose Co., now located at 171 Madison Ave., will be moved next month to 200 Madison Ave., where the firm will have larger quarters on the 20th floor. In the present location the offices are on the fourth and fifth floors of the building and the change will enable the company to get all departments on one floor.

Power Show Discloses New Developments

(*Continued from page 55*)

of geared mixing machines ranging from ¼ to 20 hp., and new easily cleaned water filters ranging in capacity from 15 gal. per min. up to 200 and higher. A line of tanks ranging up to 200 gal. in capacity, and equipped with any of the new non-corrodible metals on order, was also featured by this concern.

The spectrographic determination of impurities in metals, and new equipment designed for the quick and accurate performance of this test, were shown by Bausch & Lomb Optical Co. This company also displayed new models of optical devices for laboratory and plant. Among the recent developments shown by the Chisholm-Moore Hoist Corp. were the Cyclone electric ball-bearing chain hoist and the Hi-up electric wire-rope hoist, both particularly suitable for low-head-room installation. A compact unit cooler, designed for efficient air circulation, was displayed by the Grinnell Co., Inc. This company also exhibited a new line of malleable-iron fittings and additions to its line of pipe hangers.

Clements Mfg. Co., Inc., showed a portable blower which can be converted into a suction cleaner or a sprayer for painting. A Tornado heat blower for thawing, which provides intense heat in a short time and which comes as a complete unit, was shown by Breuer Electric Mfg. Co. A new ball-bearing, portable industrial vacuum cleaner, convertible into a blower, was also displayed by this company. The International Nickel Co., Inc., demonstrated a number of new applications for Monel metal in power and engineering equipment.

Among the new products exhibited by The Linde Air Products Co. and the Oxweld Acetylene Co., were the Oxweld Type W-17 welding blow-pipe, with a wide range of welding and cutting interchangeable heads; a two-stage oxygen regulator, permitting finer and less-fluctuating adjustment; and a portable machine for testing the strength of welds. New gasoline and oxygen cutting equipment, which has been placed on the market recently was shown by Torchweld Equipment Co. The Mixing Equipment Co., Inc., featured the extended application of totally-enclosed and ball-bearing motors and of the newest non-corrodible metals to its mixers. A working model of a new-type pressure oil filter was displayed by W. W. Nugent & Co., Inc.

Two new compact and sectionalized hoists, one with plain trolley and one with motor-driven trolley, were exhibited by Shepard Niles Crane & Hoist Corp. Veeder-Root, Inc., exhibited a "pre-determined" counter which may be so set that at any desired number it will make or break contact in an electric contactor, embodied in the counter, thereby lighting an electric lamp, ringing a bell, or stopping the machine upon which the counter is installed. The Yale & Towne Mfg. Co. showed a new Model K-25 multi-lift, elevating-platform truck, which has a normal, over-all height of 83 in. and is capable of raising a load to a height of 120 in.

November Silk Deliveries Show 4,000 Bale Drop

November raw silk imports totalled 55,293 bales, as against 62,885 in November, 1929, and 44,134 in November, 1928, it is announced by the Silk Association of America. The monthly average of imports for the first 11 months of 1930 is 44,115 bales compared with 54,830 for the same period in 1929 and 47,477 in 1928. The total in storage in the New York district at the end of November, 1930, was 49,238 bales, compared with 76,452 in November, 1929, and 49,806 in November, 1928.

Deliveries to American mills during the month just closed were about 7,000 bales above the same month last year and about 4,000 bales below October. Approximate delivery figures follow: in November, 1930, 57,333; in November, 1929, 50,562 and in November, 1928, 47,709. Deliveries in October, 1930, totaled 61,937 bales.

Rayon Price Rise Suggested by *Economist*

A conservatively optimistic picture of textile prospects for the early part of 1931 is drawn in the December issue of *Textile Economist*, the monthly business survey published by Tubize Chatillon Corp. This periodical expresses the belief that the textile industry has reached its low point and that further business activity will not show serious declines below October levels.

Discussing the rayon industry specifically, the *Economist* deplores the present price uncertainty, but approves of the recently adopted 60-day price guarantee policy and strongly urges that this policy be made permanent; the guarantee is viewed as tending to make producers less apt to announce price cuts because it would call for thoughtful deliberation before steps to that end were taken. Discussing the cut question, the periodical says: "A rayon price cut would be economic folly at such a stage, and we believe that an increase would have a beneficial effect on the industry."

Forum for Overseers of Spinning to Be Held in Boston Dec. 9

Overseers of spinning in mills of New England and New York State will attend the Textile Forum of the National Association of Cotton Manufacturers, Tuesday, Dec. 9, in the Boston Chamber of Commerce building.

Army To Buy Cotton Cloth

Bids will be received by the Depot Quartermaster, U. S. Army, Philadelphia, to supply them with 721,000 yd., khaki uniform cloth, cotton, 35 in. wide to conform with specifications dated Nov. 19, 1930. Bids will be received until Dec. 19, 1930.

Lower Prices for Spring Carpet Lines

Carpet manufacturers showed their spring lines Dec. 1, the openings being marked by substantial declines in prices, several numbers being priced lower than in any season since 1915. Bigelow-Sanford Carpet Co., Inc., made price reductions ranging from 10 to 30%, being the lowest this firm had named for last 10 to 15 years.

Indications are the drastic action will clear the air in carpet trade and soon give manufacturers a volume that has been absent for last few months.

Silk Travelers Hold Annual Meeting

The annual meeting and dinner of the Silk Travelers Association, Inc., was held at the Hotel Astor, New York, Thursday evening, and was attended by a representative cross-section of the merchandising division of the silk industry. There was no fixed program of speakers, addresses being confined to those incident to the business meeting which preceded the dinner.

Cotton Goods for Rubber and Pyroxylin Coating Standardized

A series of conferences have been held during recent months under auspices of the Association of Cotton Textile Merchants of New York, for the purpose of arriving at standard specifications and tests for cotton goods for rubber and pyroxylin coating.

As a result of these meetings standard specifications, which represent the views of practically all the producers and consumers, have been adopted. These have been accepted as of Jan. 1, 1931 by cotton goods producers and by manufacturers of rubber and pyroxylin coated goods.

Bliss, Fabyan & Co. Expansion Plans

Bliss, Fabyan & Co., Inc., are adding approximately 10,000 sq.ft., of additional floor space at their main offices, 32 Thomas St., New York. A small amount of space has also been acquired at 40 Worth St. for the use and convenience of their mill associates. Steps have been taken to increase their personnel. They will also improve their branch offices in Chicago and St. Louis.

C. K. Seid to Direct Bemberg Fabric Creation

Announcement was made Tuesday by American Bemberg Corp. that in accordance with the firm's present policy of expansion of facilities to cooperate with mills and cutters-up, C. K. Seid had been appointed to direct the work of fabric creation and promotion. Mr. Seid will work with mills and cutters-up, to anticipate their fabric requirements, to advise concerning style trends, and to relate the distinctive

qualities of Bemberg to market demands. C. K. Seid has been identified with sales promotion activities in the garment trade for 22 years. During the past five years he has been in charge of promotion of woven fabrics for the Celanese Corp., which post he resigned Nov. 10.

D.B.F. Division of S.T.A. to Meet on Jan. 10

The dyers', bleachers' and finishers' division of the Southern Textile Association will hold its next meeting at the Hotel Charlotte, Charlotte, N. C., Jan. 10, 1931, according to an announcement by Walter C. Taylor, secretary of the association. The meeting will open with a luncheon, after which several technical papers will be read and discussed, and later a banquet will be served. Paul F. Haddock, of Charlotte, chairman of the division, will preside at the meeting.

Cotton Merchants Annual Dinner Scheduled

Thirteenth annual dinner of the Association of Cotton Textile Merchants of New York will be held at the Hotel Madison, New York, Dec. 18. Charles M. Schwab, chairman of the board, Bethlehem Steel Corp., and director in numerous industrial concerns, will be the principal speaker. An address will also be made by Dr. John L. Davis. Dinner committee consists of Robert T. Stevens, chairman, R. D. Halliwell and Francis R. Masters.

Converters to Discuss Trade Problems

Converters will have an opportunity to discuss trade problems at the annual meeting of the Converters' Association to be held Dec. 16 at the Hotel Pennsylvania, New York. Beside a large representation from converters it is expected that most trade associations will have representatives there. A large number of converters not members have signified their intention of attending. Henry Lauten, president of the association, has had charge of arrangements.

Commission Throwsters Meet Dec. 9

The annual meeting of the Commission Throwsters Division of the Silk Association of America, Inc. will take place Dec. 9 at the Advertising Club, New York City, at 12.30 p.m. H. A. Reiling, chairman of the division will preside. Officers will be elected for the coming year.

Berkshire Will Sell to Group Retailers

It was announced this week that Berkshire Knitting Mills, Reading, Pa., had revised its merchandising policy to sell to large retailing groups. The firm will not sell to individual retailers, it was stated, and the new policy will not affect sales to wholesalers in any way.

Postpone Meeting of Rayon Technicians

It was announced this week that the meeting to have been held in Philadelphia, Dec. 5 and 6 to form an association of the heads of the technical departments of the various rayon producing plants had been postponed until spring which it is believed will be a more propitious time for the launching of such an organization.

New Firm to Handle Given Co. Lines on Coast

John M. Given Co., hosiery mill agents, of New York, announce that after Jan. 2 their Pacific coast sales will be handled by a new firm, Caruthers & Macauley, with offices in Los Angeles. This will be the only hosiery line carried by that partnership.

Business News

Promotions in U. S. Bobbin & Shuttle Co's. Organization

The current announcement of Frank W. Wakefield, long comptroller and secretary and now general manager of the U S Bobbin & Shuttle Co., Manchester, N. H., follows the recent appointment of Carl P. Park to the office of general works manager in charge of manufacturing.

Like Mr. Wakefield, Mr. Park has been associated with the company for a long time and for the last year has been chief engineer in charge of the company's engineering and research department.

D. R. Dohner Director of Art for Westinghouse

Donald R. Dohner has been appointed director of art for the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Mr. Dohner was formerly instructor in design at Carnegie Institute of Technology. He will assist in carrying out the new plan of the Westinghouse company for incorporating the principles of design making for fine appearance as well as mechanical perfection, in the design of electrical machinery.

Southern Shuttles, Inc., Organized

Southern Shuttles, Inc., Greenville, S. C., recently organized by Louis P. Batson and W. N. King, has purchased a cross-circulation kiln from the Moore Dry Kiln Co., Jacksonville, Fla. It will use the "controlled air-drying" process, drying on very low temperatures, with relatively high humidities and fast reversible circulation, and will be placed in operation about Jan. 1.

Joins Southern Staff of A. Klipstein & Co.

C. M. Woolfolk, formerly connected with the Grasselli Chemical Co., recently joined the southern sales organization of A. Klipstein & Co., under the direction of Paul F. Haddock, Charlotte, N. C.

General Electric Staff Gives 1% Wages to Aid Idle

Every employee of the General Electric Co., from president to office boy, who is working 50% or more full time, will contribute one per cent of his December wage to the company's new unemployment fund and the General Electric Co. will match such contributions dollar for dollar, it was announced in New York Nov. 24 by President Gerard Swope. The fund is aimed to aid G. E. employees who may be laid off for lack of work. Approximately 35,000 employees have been contributing to the plan and on Dec. 1 will have paid in $350,000.

Obituary

George Wigglesworth

George Wigglesworth, of Milton, Mass., a prominent factor in the textile industry, died Nov. 28 at Bermuda, where he had gone with his son, Congressman Richard B. Wigglesworth, in an effort to regain his health. Mr. Wigglesworth graduated from Harvard in 1874. He practiced law several years. For a time he was president of the York Mfg. Co. and the Everett Mills and then became president of the Amoskeag Mfg. Co., Manchester, N. H. Mr. Wigglesworth was chairman of the board of directors of the New England Trust Co., a director of the Merchants National Bank, the Merrimack Mills, the Tampa Electric Co., the Waltham Bleachery & Dye Works and the Massachusetts Hospital Life Insurance Co. He was trustee of the Central Aguirre Sugar Cos. He was first treasurer of the Trustees Public Reservations and of the General Insurance Guaranty Fund.

Charles H. Robinson

Charles H. Robinson, president, Elizabeth City (N. C.) Cotton Mills, and a director in the Elizabeth City Hosiery Co., died at his home Nov. 25. He was 82 years of age and had been prominently identified with the banking and industrial interests of Eastern North Carolina for more than four decades. Mr. Robinson was president of the First and Citizens National Bank of Elizabeth City, and a director in the Southern Trust Co., and the Virginia-Carolina Joint Stock Land Bank.

J. Lowell Williams

J. Lowell Williams, president and treasurer of the Williams Brothers Mfg. Co., knit goods manufacturers, Rome, N. Y., died at his home in that city on Nov. 24. Mr. Williams was born in Utica, N. Y., in 1867, and went to Rome in 1878. He entered the firm of Williams Bros. Knitting Co., composed of his father and two brothers, the late C. E. and E. S. Williams.

Frank J. Clark

Frank J. Clark, vice-president and general manager, Anderson (S. C.) Cotton Mills, died suddenly at his residence Nov. 27 as the result of an acute heart attack. Mr. Clark was born in Graniteville, S. C., in 1879, and received his first textile experience at Lexington, S. C. He came to Anderson in 1911 as superintendent of Anderson Cotton Mills.

John Dobbs

John Dobbs, of Lowell, Mass., died Nov. 21, at his home, after a long illness, aged 72 years. He was overseer at the Massachusetts Mohair Plush Co. for 26 years, retiring from active employment 10 years ago. He was affiliated with the National Association of Woolen and Worsted Overseers. He is survived by his widow, one daughter and two sons.